SyncMaster T200HD/T220HD

LCD Monitor

User Manual

Safety Instructions

Notational

Note

These safety instructions must be followed to ensure your safety and prevent property damage.

Make sure to read the instructions carefully and use the product in the correct manner.

Warning / Caution

Otherwise, it may result in death or personal injury.

Otherwise, it may result in personal injury or property damage.

Notational Conventions

Prohibited	Important to read and understand at all times
Do not disassemble	Disconnect the plug from the outlet
Do not touch	Ground to prevent an electric shock

Power

When not used for extended period of time, set your computer to DPM.

If using screen saver, set it to active screen mode.

The images here are for reference only, and are not applicable in all cases (or countries).

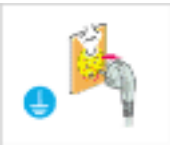
Shortcut to Anti-Afterimage Instructions

Do not use a damaged power cord or plug or a damaged or loose power outlet.

- Otherwise, this may result in electric shock or fire.

Do not touch the power plug with wet hands when removing or plugging the plug into the outlet.

- Otherwise, this may result in electric shock.



Make sure to connect the power cord to a grounded power outlet.

- Otherwise, it may result in electric shock or personal injury.

Ensure that the power plug is plugged into the power outlet firmly and correctly.

- Otherwise, this may result in fire.

Do not forcefully bend or pull the power plug and do not place any heavy material on it.

- Otherwise, this may result in fire.

Do not connect multiple appliances to the same power outlet.

- Otherwise, this may cause fire due to overheating.

Do not disconnect the power cord while using the product.

- Otherwise, this may result in damage to the product due to electric shock.

To disconnect the apparatus from the mains, the plug must be pulled out from the mains socket, therefore the mains plug shall be readily operable.

- This may cause electric shock or fire.

Use only the power cord provided by our company. Do not use the provided power cord of another product.

- Otherwise, this may result in fire or electric shock.

Installation

Be sure to contact an authorized Service Center when installing your monitor in a location with heavy dust, high or low temperatures, high humidity, and exposed to chemical substances and where it operates for 24 hours such as at airports, train stations etc.

Failure to do so may cause serious damage to your monitor.

Do not drop the monitor when moving it.

- This may cause damage to the product or the person carrying it.

Ensure that at least two persons lift and move the product.

- Otherwise, it may be dropped and cause personal injury, and/or damage the product.

When installing the product in a cabinet or rack, make sure that the front end of the bottom of the product does not project out.

- Otherwise, it may fall or cause personal injury.
- Use a cabinet or rack of a size appropriate to the product.

Do not place candles, mosquito repellant, cigarettes and any heating appliances near the product.

- Otherwise, this may result in fire.

Keep heating appliances as far away from the power cord or the product as possible.

- Otherwise, this may result in electric shock or fire.

Do not install it in a badly ventilated location such as a bookcase or closet.

- Otherwise, this may result in fire due to an increase in the internal temperature.

Put down the monitor carefully.

- Failing to do so may damage the monitor.

Do not place the front of the product on the floor.

- Otherwise, this may result in damage to the screen display.

Ensure that an authorized installation company installs the wall mount.

- Otherwise, it may fall and cause personal injury.
- Make sure to install the specified wall mount.

Install your product in a well ventilated location. Ensure that there is a clearance of more than 10 cm from the wall.

- Otherwise, it may result in fire due to an increase in the internal temperature.

Bend the outdoor antenna cable downwards at the location where it goes in so that rainwater does not flow in.

- If rainwater enters the product, it may result in electric shock or fire.

Install the antenna far away from any high voltage cables.

- If the antenna touches or falls onto a high voltage cable, it may result in electric shock or fire.

Ensure that the packaging vinyl is kept away from children.

- Otherwise, it may result in serious harm (suffocation) if children play with it.

If the height of your monitor is adjustable, do not place any object or part of your body on the stand when lowering it.

- This may cause damage to the product or the person carrying it.

Clean

When cleaning the monitor case or the surface of the TFT-LCD screen, wipe with a slightly moistened, soft fabric.

Do not spray cleaner directly onto the surface of the product.

- Otherwise, this may result in the discoloration and distortion of the structure and the screen surface may peel off.

Clean the product using a soft cloth with a monitor cleaner only. If you must use a cleaner other than the monitor cleaner, dilute it with water at a ratio of 1:10.

When cleaning the power plug pins or dusting the power outlet, clean it with a dry cloth.

- Otherwise, it may result in fire.

When cleaning the product, make sure to disconnect the power cord.

- Otherwise, it may result in electric shock or fire.

When cleaning the product, disconnect the power cord and clean it softly with a dry cloth.

- (Do not use chemicals such as wax, benzene, alcohol, thinner, mosquito repellant, lubricant, or cleaner.) These may change the appearance of the product surface and peel off the indication labels on the product.

Since the product housing is easily scratched, make sure to use the specified cloth only.

- Use the specified cloth adding only a little water. As the product may be scratched if there is any foreign material on the cloth, make sure to shake it thoroughly before using it.

When cleaning the product, do not spray water directly onto the main body of the product.

- Ensure that water does not enter the product and that it is not wet.
- Otherwise, this may result in electric shock, fire or a malfunction.

Others

The product is a high voltage product. Ensure that users do not disassemble, repair or modify the product themselves.

- Otherwise, this may result in electric shock or fire. If the product needs to be repaired, contact a Service Center.

If there is a strange smell or a strange sound or smoke is coming from the product, disconnect the power plug immediately and contact a Service Center.

- Otherwise, this may result in electric shock or fire.

Do not place this product in a location exposed to moisture, dust, smoke, water, or in a car.

- Otherwise, this may result in electric shock or fire.

When you drop the product or the case is broken, turn the power off and disconnect the power cord. Contact a Service Center.

- Otherwise, this may result in electric shock or fire.

If thunder or lightening is occurring, do not touch the power cord or antenna cable.

- Otherwise, this may result in electric shock or fire.

Do not try to move the monitor by pulling only the wire or the signal cable.

- Otherwise, it may fall and result in electric shock, damage to the product or fire due to damage to the cable.

Do not lift or move the product back and forwards or right and left while only holding the power cord or signal cables.

- Otherwise, it may fall and result in electric shock, damage to the product or fire due to damage to the cable.

Make sure that the ventilating opening is not blocked by a table or curtain.

- Otherwise, it may result in fire due to an increase in the internal temperature.

Do not place any containers containing water, vases, flowerpots, medicines as well as any metal on the product.

- If water or a foreign material enters the product, disconnect the power cord and contact a Service Center.
- This may result in a product malfunction, electric shock, or fire.

Do not use or keep combustible spray or flammable material near the product.

- Otherwise, this may result in an explosion or fire.

Do not insert any metal, such as chopsticks, coins, pins and steel, or flammable objects, such as matches or paper, inside the product (through the ventilating openings, input and output terminals, etc).

- If water or foreign material enters the product, disconnect the power cord and contact a Service Center.
- Otherwise, this may result in electric shock or fire.

When using a fixed screen for a long time, an afterimage or stain may occur.

- If you are not using your product for a long period of time, put it into sleep mode or use a moving screen saver.

Set a resolution and frequency appropriate to the product.

- Otherwise, your eyesight may be damaged.

When using headphones or earphones, do not turn the volume too high.

- Having the sound too loud may damage your hearing.

If you continually move closer to the product screen, your eyesight may be failing.

To ease eye strain, take at least a five-minute break after every hour of using the monitor.

Do not install it in an unstable location such as an unstable rack or uneven surface or a location exposed to vibrations.

- Otherwise, it may fall and cause personal injury and/or damage the product.
- If you use the product in a location exposed to vibrations, it may damage the product and result in fire.

When moving the product, turn the power off and disconnect the power plug, antenna cable, and all the cables connected to the product.

- Otherwise, it may result in electric shock or fire.

Ensure that children do not hang onto the product or climb up onto the product.

- The product may fall and cause personal injury or death.

If you do not use the product for a long period of time, disconnect the power cord from the power outlet.

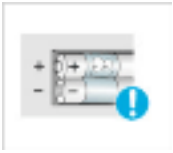
- Otherwise, this may result in overheating or fire due to dust, and may result in fire due to electric shock or leakage.

Do not place any heavy items or toys or confectionery, such as cookies etc. that may attract the attention of children and to the product.

- Your children may hang onto the product causing it to fall and this may result in personal injury or death.

Be careful that children do not place the battery in their mouths when removed from the remote control. Place the battery in a location that children or infants cannot reach.

- If children have had the battery in their mouths, consult your doctor immediately.



When replacing the battery, insert it with right polarity (+, -).

- Otherwise, the battery may become damaged or it may cause fire, personal injury or damage due to leakage of the internal liquid.

Use only specified standard batteries. Do not use new and used batteries together.

- This may cause a battery to break or leak and may cause fire, injury, or contamination (damage).

The batteries (and rechargeable batteries) are not ordinary refuse and must be returned for recycling purposes. The customer is responsible for returning the used or rechargeable batteries for recycling.

- The customer can return used or rechargeable batteries to a nearby public recycling center or to a store selling the same type of the battery or rechargeable battery.

Do not turn the product upside down or move it while holding only the stand.

- Otherwise, it may fall and result in personal injury and/or damage to the product.

Do not place the product in a location exposed to direct sunlight or near any heat such as a fire or heater.

- This may reduce the lifetime of the product, and may result in fire.

Do not drop any objects onto the product or cause any impact to the product.

- Otherwise, this may result in electric shock or fire.

Do not use a humidifier or kitchen table near the product.

- Otherwise, this may result in electric shock or fire.

When there is a gas leak, do not touch the product or the power plug but ventilate immediately.

- If a spark occurs, it may cause an explosion or fire.

If the product has been turned on for a long time, the display panel becomes hot. Do not touch it.

Be careful when adjusting the angle of the product or the height of the stand.

- This may result in personal injury as your hand or fingers may become caught.
- Also, if you tilt the product too far, it may fall and cause personal injury.

Do not install the product in a location low enough for children to reach.

- Otherwise, it may fall and result in personal injury.
- Since the front part of the product is heavy, install the product on a level and stable surface.

Do not put any heavy objects on the product.

- This may result in personal injury and/or damage to the product.

Good Postures When Using the Monitor

When using the product, use it in the correct position.

- Keep your back straight while looking at the product.
- The distance between your eyes and the screen should be between 45 to 50 cm. Look at the screen from a slightly higher location than the height of the screen.
- When using the product, use it in the correct position.
- Adjust the angle so that light is not reflected on the screen.
- Place your arms perpendicular to your sides and allow your arms to be level with the back of the hand.
- Keep your elbow at 90 degrees.
- Keep your knees at greater than 90 degrees, and keep your heels firmly on the floor. Keep your arms lower than your heart.

Introduction

Package Contents

Note

Please make sure the following items are included with your monitor.

If any items are missing, contact your dealer.

Contact a local dealer to buy optional items.

Unpacking

Without stand

Monitor

With stand

Monitor

Manuals

Quick Setup Guide

Warranty Card

(Not available in all locations)

User's Guide

Cables

D-Sub Cable

Power Cord

Stereo Cable

Sold separately

DVI Cable

HDMI Cable

Headphones

Sold separately

USB Cable

TV Antenna Cable

(Coaxial Cable)

Component(P_R, P_B, Y) Cable

Audio cable

Digital audio optic output cable

Others

Remote Control

BN59-00624A

Batteries (AAA X 2)

(Not available in all locations)

Cleaning Cloth

Cable holding ring

Stand Body

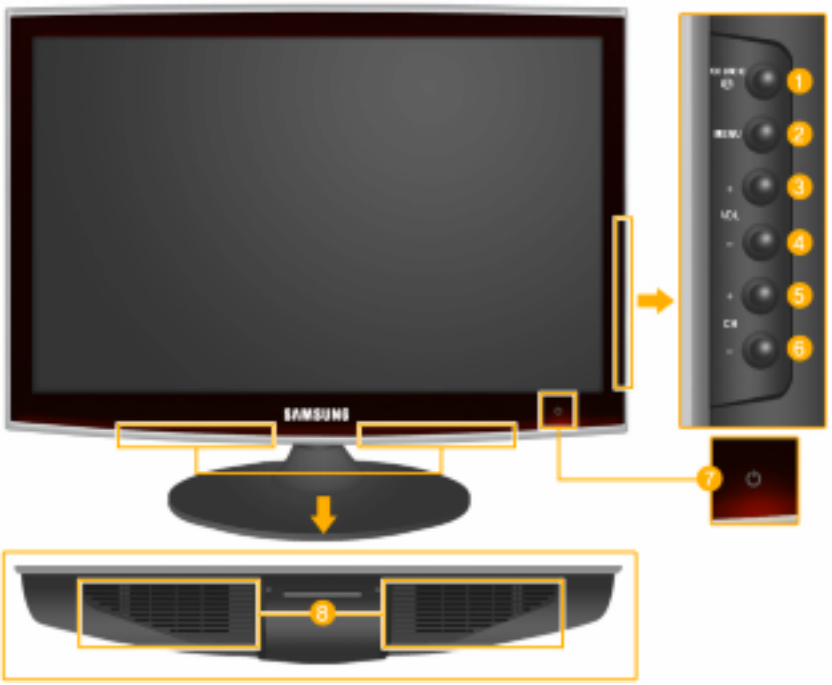
Stand Base

Note

Cleaning Cloth is only provided for highly polished black products as a product feature.

Your Monitor

Front



1 SOURCE

Activates a highlighted menu item.

Push the 'SOURCE', button to change the input signal source.

Changing the source is only allowed for external devices connected to the product at the time.

To switch Screen modes:

[PC] →[Ext.] → [DVI] → [TV] → [Component] → [HDMI1] → [HDMI2]

>> Click here to see an animation clip

2 *MENU*

Use this button to open the on-screen menu and to exit from the on-screen menu or to close the screen adjustment menu.

3,4 *- VOL+*

Moves from one menu item to another horizontally or adjusts selected menu values. Adjusts the audio volume.

5,6 *- CH +*

Moves from one menu item to another vertically or adjusts selected menu values. In **TV**/**DTV** mode, selects TV/DTV channels.

7 *Power button [⏻]*

Use this button for turning the product on and off.

Note

The button to the right of the monitor are touch-sensitive buttons.

Touch a button lightly with your finger.

Power indicator

This light is lit when operating normally, and blinks once when your adjustments are saved.

Note

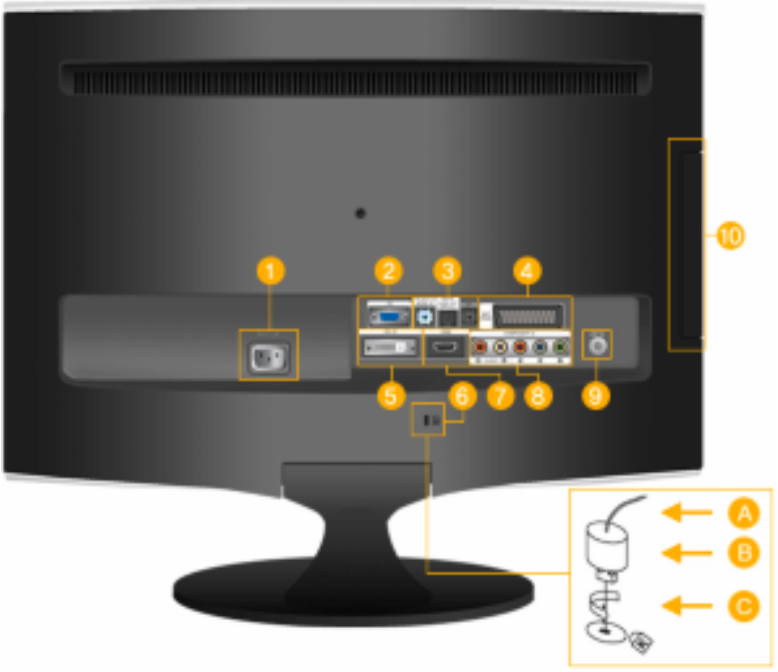
See PowerSaver described in the manual for further information regarding power saving functions. For energy conservation, turn your monitor OFF when it is not needed or when leaving it unattended for long periods.

8 *Speaker*

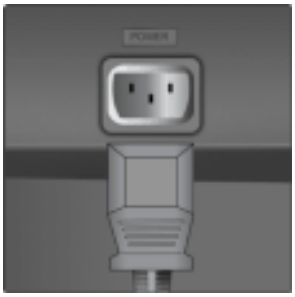
Rear

Note

The configuration at the back of the product may vary from product to product.



1 *POWER*



POWER

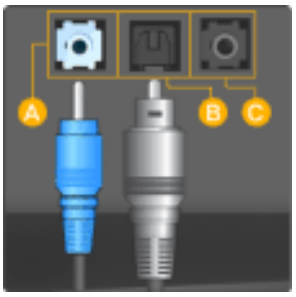
Connect the power cord for your monitor to the *POWER* port on the back of the product.

2 *PC*

PC

Connect the *PC* terminal at the back of your monitor to your computer.

3 *HDMI/PC/DVI-D AUDIO IN / DIGITAL AUDIO OUT (OPTICAL) / EX-LINK*



A *HDMI/PC/DVI-D AUDIO IN*

Connect the *[HDMI/PC/DVI-D AUDIO IN]* terminal at the back of your product to your computer's sound card.

B *DIGITAL AUDIO OUT(OPTICAL)*

Connect the *[DIGITAL AUDIO OUT(OPTICAL)]* terminal of your product to the digital sound output or standard sound output terminal of the DVD home theater (or amplifier) using a digital audio optical output cable.

C *EX-LINK*

This is a reserved terminal used for servicing.

4 *EXT(RGB)*

Connect the EXT(RGB) port of the monitor to the DVD Player using a SCART jack.

As for EXT(RGB) port of the monitor, it makes TV or Video signal input and output.

5 *DVI-D*

DVI-D

Connect the DVI cable to the *DVI-D* port on the back of your product.

6 *Kensington Lock*

The Kensington Lock is a device used to physically fix the system when using it in a public place. The locking device has to be purchased separately. The appearance and locking method may differ from the illustration depending on the manufacturer. Refer to the manual provided with the Kensington Lock for proper use. The locking device has to be purchased separately.

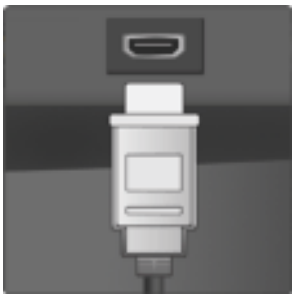
Note

The location of the Kensington Lock may be different depending on its model.

Using the Anti-Theft Kensington Lock

1. Insert the locking device into the Kensington slot on the Monitor (B) and turn it in the locking direction (A).
2. Connect the Kensington Lock cable.
3. Fix the Kensington Lock to a desk or a heavy stationary object.

7 *HDMI IN 1*



HDMI IN 1

Connect the [HDMI IN 1] terminal at the back of your monitor to the HDMI terminal of your digital output device using a HDMI cable.

8 *COMPONENT IN*

A *R - AUDIO - L*

Connect the port of the DVD, VCR (DVD / DTV Set-Top Box) to the *[R - AUDIO - L]* port of the product.

B P_R, P_B, Y

Connect the VIDEO OUT port of the DVD / DTV Set-Top Box to the *[P_R, P_B, Y]* input ports using a component video cable (P_R, P_B, Y).

9 *ANT IN*

Connect the CATV cable or TV antenna cable to the "ANT IN" port on the rear side of the product. Make sure to use a TV antenna cable (sold separately) as the antenna cable.

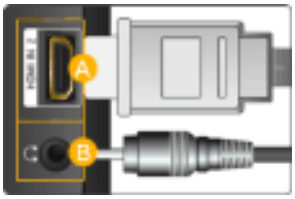
10 *COMMON INTERFACE*

This contains information on CAM inserted in the CI slot and displays it.

The Application Info inserting is about the CI CARD.

You can install the CAM anytime whether the TV is ON or OFF.

10 *HDMI IN 2* / 🎧



A *HDMI IN 2*

Connect the [HDMI IN 2] terminal at the back of your product to the HDMI terminal of your digital output device using a HDMI cable.

B 🎧

Connect your headphones to the Headphone connection terminal.

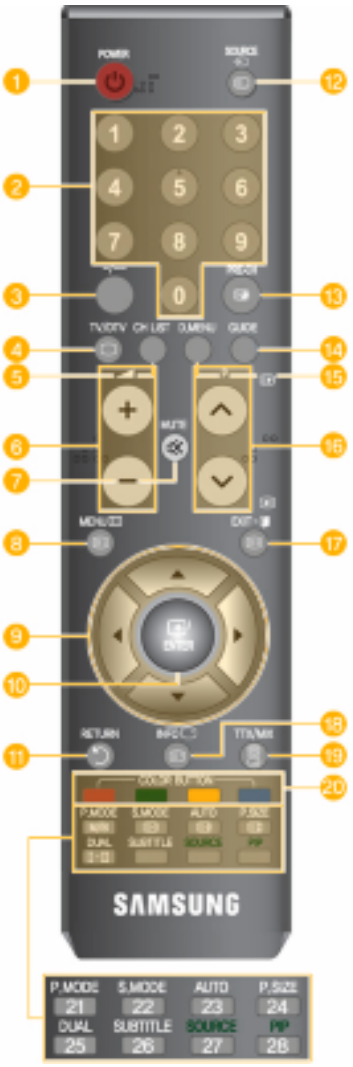
Note

See Connecting Cables for further information regarding cable connections.

Cable holding ring

- Fix the cables using the holding ring, as shown in the figure.

Remote Control



1. POWER
2. Number Button
3. -/--
4. TV/DTV
5. CH LIST
6. − +
7. MUTE
8. MENU
9. ▲▼◀▶ Up-Down Left-Right buttons
10. ENTER
11. RETURN
12. SOURCE
13. PRE-CH
14. GUIDE
15. D.MENU
16. ∨ P ∧
17. EXIT
18. INFO
19. TTX/MIX
20. COLOR BUTTON
21. P.MODE, M/B (MagicBright)
22. S.MODE
23. AUTO
24. P.SIZE
25. DUAL
26. SUBTITLE
27. *SOURCE*
28. *PIP*

1. POWER	Turns the product On/Off.
2. Number button	Press to change the channel.
3. -/--	(One/Two-Digit channel selection) Use to select a channel numbered ten or over. Press this button, and the "--" symbol is displayed.

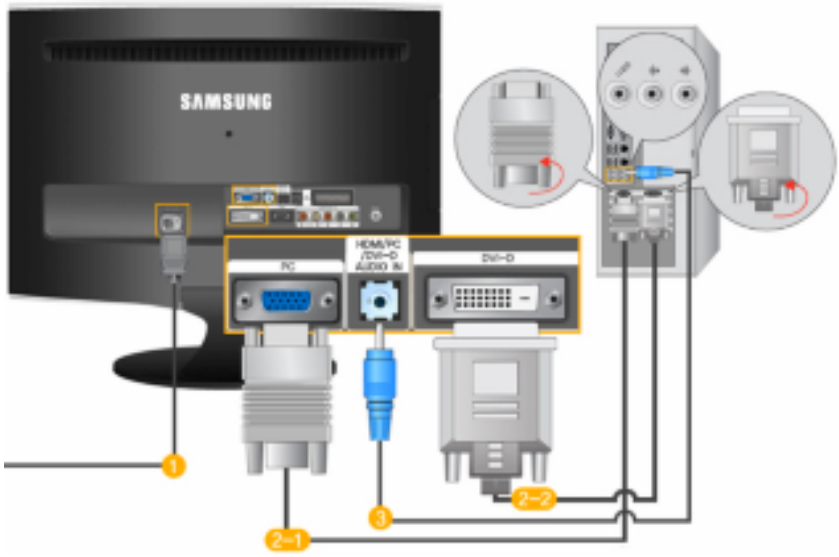
	Enter the two-digit channel number.
4. TV/DTV	Selects the TV and DTV mode directly.
5. CH LIST	It display "Channel List" on the screen.
6. − +	Adjusts the audio volume.
7. MUTE	Adjusts the audio volume.
8. MENU	Opens the on-screen menu and exits from the menu or closes the adjustment menu.
9. ▲▼◀▶ Up-Down Left-Right buttons	Moves from one menu item to another horizontally, vertically or adjusts selected menu values.
10. ENTER	Activates a highlighted menu item.
11. RETURN	Returns to the previous menu.
12. SOURCE	Press the button to change the input signal SOURCE. Changing the SOURCE is only allowed for external devices that are connected to the monitor at the time. - You cannot watch TV or DTV using the SOURCE button - You can only watch TV using the TV or DTV button.
13. PRE-CH	This button is used to return to the immediately previous channel.
14. GUIDE	Electronic Program Guide (EPG) display.
15. D.MENU	DTV menu display
16. ∨ P ∧	In TV mode, selects TV channels.
17. EXIT	Exits from the menu screen.
18. INFO	Current picture information is displayed on the upper left corner of the screen.
19. TTX/MIX	TV channels provide written information services via teletext. - Teletext Buttons For more information > TTX / MIX
20. COLOR BUTTON	Press to add or delete channels and to store channels to the favorite channel list in the “Channel List” menu.
21. P.MODE, M/B (Magic-Bright)	Press to select a pre-defined Picture Mode of the monitor or to change the picture atmosphere as required. When you press this button, current mode is displayed on the lower center of the screen. **TV** / **DTV** / **Ext.** / **Component** / **HDMI**: P.MODE

	The monitor has three automatic picture settings that are preset at the factory. Then press the button again to circle through available preconfigured modes. (**Dynamic** > **Standard** > **Movie**) PC / DVI Mode : M/B (MagicBright) MagicBright is a feature providing the optimum viewing environment depending on the contents of the image you are watching. Then press the button again to circle through available preconfigured modes. (**Entertain** > **Internet** > **Text** > **Dynamic Contrast** > **Custom**)
22. S.MODE	When you press this button, current mode is displayed on the lower center of the screen. The monitor has a built-in high fidelity stereo amplifier. Then press the button again to circle through available preconfigured modes. (**Standard** > **Music** > **Movie** > **Speech** > **Custom**)
23. AUTO - Available In PC mode Only	Adjusts the screen display automatically.
24. P.SIZE	Press to change the screen size. **PC**/ **DVI** mode : **Wide** / **4:3** **TV**/**DTV** /**Ext.** mode: **Auto Wide** / **Wide** / **16:9** / **Wide Zoom** / **Zoom** / **4:3** **Component** mode: **Wide** / **16:9** / **Wide Zoom** / **Zoom** / **4:3** **HDMI** mode: **Wide** / **16:9** / **Wide Zoom** / **Zoom** / **4:3** / **Just Scan**
25. I-II DUAL	**STEREO/MONO**, **DUAL I** / **DUAL II** and **MONO/NICAM MONO/NICAM STEREO** can be operated depending on broadcasting type by using DUAL button on the remote control while watching TV.
26. SUBTITLE	Dgital subtitle display
27. *SOURCE - Not Available*	
28. *PIP-Not Available*	

Connections

Connecting Cables

Connecting to a Computer



1 Connect the power cord for your monitor to the POWER port on the back of the monitor.

Plug the power cord for the monitor into a nearby outlet.

2 Use a connection appropriate for your computer.

2-1 Using the D-sub (Analog) connector on the video card.

- Connect the signal cable to the [PC] port on the back of your monitor.

[PC]

2-2 Using the DVI (Digital) connector on the video card.

- Connect the DVI Cable to the [DVI-D] Port on the back of your Monitor.

[DVI-D]

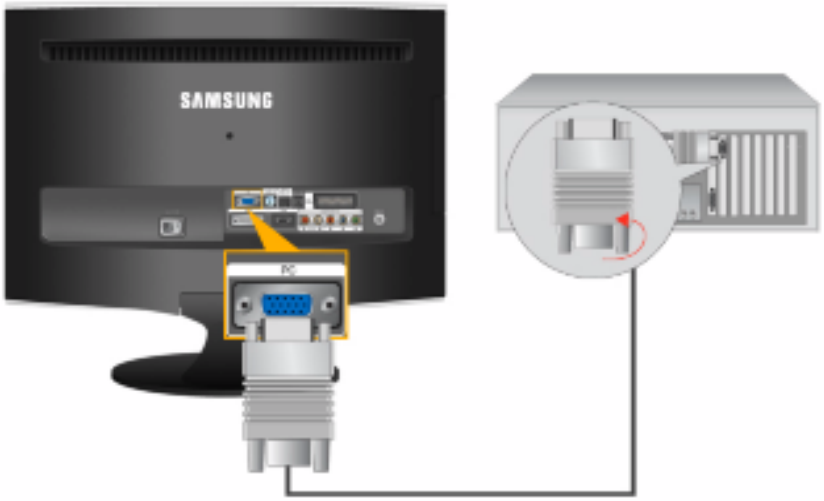
3 Connect the [HDMI / PC / DVI-D AUDIO IN] port on the rear side of the monitor to the sound card of the PC.

Note

- You may enjoy clear and quality sound from the computer sound card using the monitor speakers. (You don't need to install any separate speakers for your computer.)
- You may get a blank screen depending on the type of video card you are using, if you connect simultaneously both the D-sub and DVI cables to one computer.

- If you connect properly your monitor using the DVI connector but get a blank or fuzzy screen, check to see if the monitor status is set to analogue. Press 'SOURCE [⏎]' button to have the monitor double-check the input signal source.

Connecting to a Macintosh



1. Using the D-sub (Analog) connector on the video card.

- Connect the signal cable to the D-SUB port on the back of your monitor.

[PC]

Note

Turn on the monitor and Macintosh.

Connecting to Other devices

Note

- This monitor allows the user to connect it to such input devices as a DVD player, a VCR or cam-corder, or a DTV or TV without disconnecting the PC.
- The configuration at the back of the monitor may vary from product to product.
- The DVI to HDMI cable, digital audio optic output cable, and RCA to stereo (for PC) cable are all sold separately.

  Contact a Service Center to purchase any products sold separately.

Connecting EXT.(RGB) - It only applies to AV DEVICE that supports SCART.

Note

Connect to the DVD Devices input if the device has a EXT (RGB) jack. You can watch DVD simply by hooking up the DVD player with the monitor as long as the power is on.

1. Connect the EXT (RGB) port of the monitor to the DVD Player using a SCART jack.
2. When a Scart device is connected to your monitor, the Source automatically changes to Ext.

Connecting TV

Note

You may view television programs on the monitor if it is connected to an antenna or CATV cable without installing any separate TV reception hardware or software on your computer.

1. Connect the CATV cable or TV antenna cable to the "ANT IN" port on the rear side of the monitor.

   Make sure to use a TV antenna cable (sold separately) as the antenna cable.

   - *When using an interior antenna terminal:*

     Check the antenna terminal on the wall first and connect the antenna cable.

   - *When using an outdoor antenna:*

     If you are using an outdoor antenna, use a professional for installation if possible.

   - *To connect the RF cable to the antenna input terminal:*

     Keep the copper wire portion of the RF cable straight.

2. Turn on the monitor.
3. Select TV using the TV / DTV.
4. Select a desired TV channel.

Note

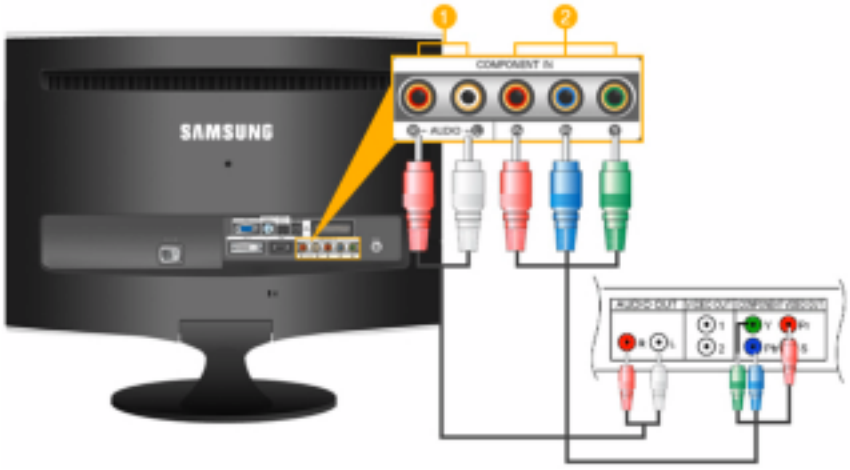
Is weak signal causing poor reception?

Purchase and install a signal amplifier for better reception.

Connecting DVD / DTV Set Top Box

Note

Connect to the DVD / DTV Set Top Box input if the device has a [COMPONENT IN] connector. You can watch Component simply by hooking up the Component with the monitor as long as the power is on.



1 Connect the port of the DVD, VCR (DVD / DTV Set-Top Box) to the *[R-AUDIO-L]* port of the monitor.

2 Connect the VIDEO OUT port of the DVD / DTV Set-Top Box to the *[P_R, P_B, Y]* input ports using a component video cable (P_R, P_B, Y).

Note

Select "Component" using the 'SOURCE [⏎]'

If you connect the P_R, P_B, and Y component cables to the incorrect terminals, the screen will be displayed in red or blue.

For single-family houses, install an UHF antenna to receive digital broadcasting.

Connecting HDMI

Note

You can connect digital output devices to your monitor.

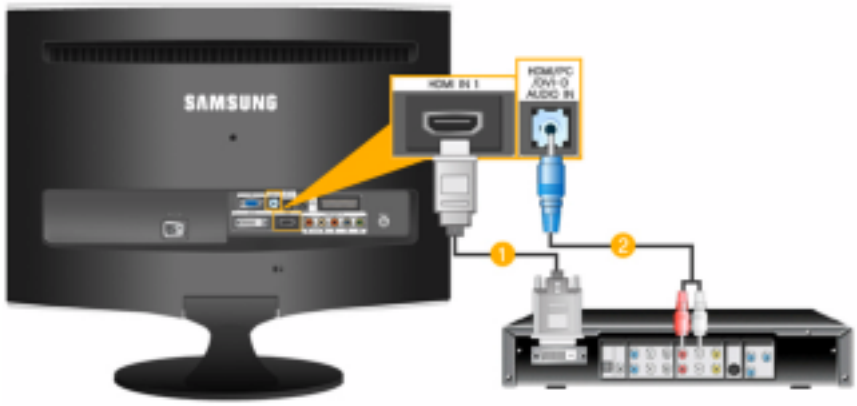
You can enjoy better screen and sound quality.

1. Connecting Using a HDMI Cable

a. Input devices such as digital DVD are connected to the *HDMI IN* terminal of the monitor using the HDMI cable. When all the connections are completed, connect the power cords for the monitor and DVD(or the device connected to the digital output terminal).

Select HDMI using the '*SOURCE [⏎]*' button.

2. Connecting Using a DVI to HDMI Cable



1 Connect the DVI output terminal of a digital output device to the [HDMI IN] terminal of the monitor using a DVI to HDMI cable.

2 Connect the red and white jacks of an RCA to stereo (for PC) cable to the same colored audio output terminals of the digital output device, and connect the opposite jack to the *[HDMI/PC/DVI-D AUDIO IN]*terminal of the monitor.

3. When all the connections are completed, connect the power cords for the monitor and DVD (or the device connected to the digital output terminal).

4. Select "HDMI" using the 'SOURCE [⏎]' button.

Note

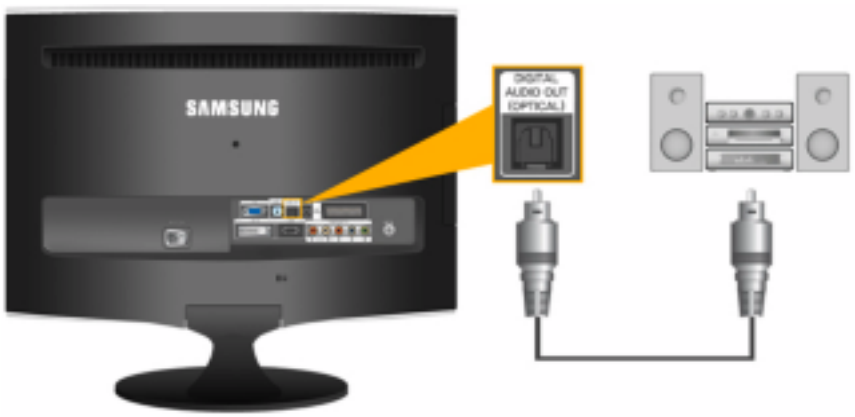
If you just connect using the DVI to HDMI cable without connecting to the sound source, you cannot hear sound.

Connecting the audio output terminal of a digital device to the *[R-AUDIO-L]* of *[COMPONENT IN]* of the monitor using an audio cable will not give you sound. Make sure to connect to the *[HDMI / PC/DVI-D AUDIO IN]* terminal of the monitor.

Connecting and Using an Amplifier

Note

You can connect the digital sound input (optical) or standard sound input terminal of your amplifier to your monitor using the correct cable.



1. Connect the *[DIGITAL AUDIO OUT (OPTICAL)]* terminal of your monitor to the digital sound input terminal of your digital amplifier using an optical cable.
2. Set the Internal Mute On in the Sound menu using the MENU button.
3. Adjust the sound volume using the Volume button of your amplifier
4. If the connections are set up, power up your monitor and amplifier.

Note

- Because no sound is emitted from the monitor, you need to use an amplifier.
- For information on how to connect a speaker and amplifier, refer to the respective user manuals provided by their manufacturers.

Connecting COMMON INTERFACE

Note

You can install the CAM anytime whether the TV is ON or OFF.

Purchase the CI CAM module by visiting your nearest dealer or by phone.

1. Insert the CI CARD into the CAM in the direction of the arrow until it fits.
2. Insert the CAM with the CI CARD installed into the common interface slot.

   (Insert the CAM in the direction of the arrow, right up to the end so that it is parallel with the slot.)
3. Check if you can see a picture on a scrambled signal channel.

Connecting Headphone

Note

You may connect your headphones to the monitor.

1. Connect your headphones to the Headphone connection terminal.

Using the Stand

Monitor Assembly

Monitor and Bottom

Tilt angle

You can adjust the tilt angle within a range of 5° forward to 25° backward for the most comfortable viewing angle.

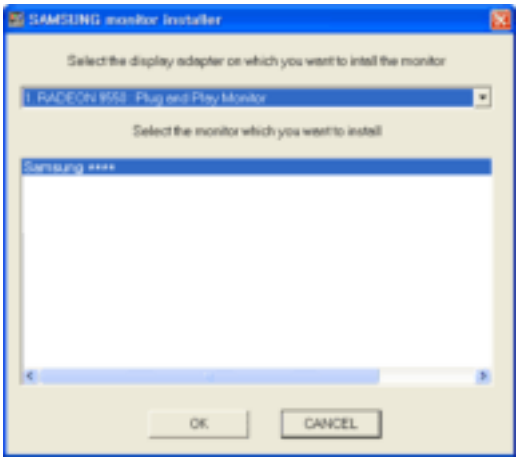
Using the Software

Monitor Driver

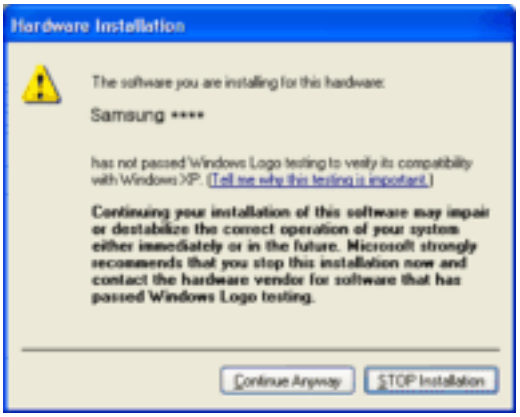
> **Note**
>
> When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.
>
> Prepare a blank disk and download the driver program file at the Internet web site shown here.
> **Internet web site :**
>
> http://www.samsung.com/ (Worldwide)

Installing the Monitor Driver (Automatic)

1. Insert CD into the CD-ROM drive.
2. Click "Windows".
3. Choose your monitor model in the model list, then click the "OK" button.


SAMSUNG monitor installer
Select the display adapter on which you want to intall the monitor
Select the monitor which you want to install
Samsung ****
OK
CANCEL

4. If you can see following message window, then click the "Continue Anyway" button. Then click "OK" button (Microsoft® Windows® XP/2000 Operating System).


Hardware Installation
The software you are installing for this hardware:
Samsung ****
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

Note

This monitor driver is under certifying MS logo, and this installation doesn't damage your system.

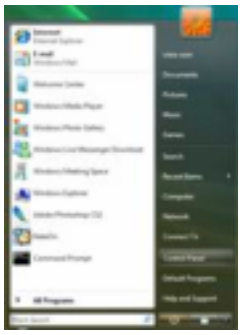
The certified driver will be posted on Samsung Monitor homepage.

http://www.samsung.com/

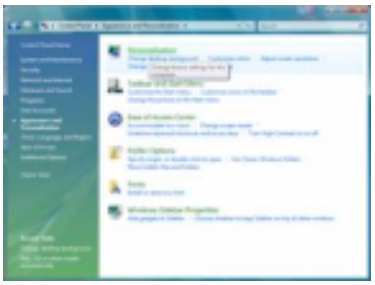
Installing the Monitor Driver (Manual)

Microsoft® Windows Vista™, Operating System

1. Insert your Manual CD into your CD-ROM drive.
2. Click (Start) and "Control Panel". Then, double-click on "Appearance and Personalization".



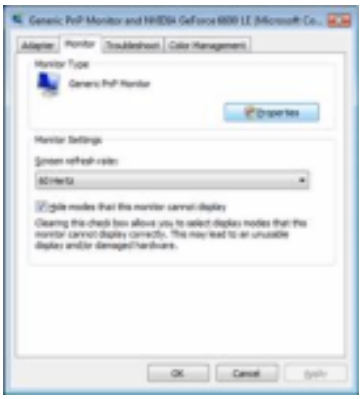
3. Click "Personalization" and then "Display Settings".

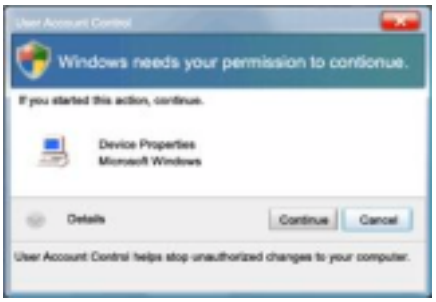


4. Click "Advanced Settings...".

5. Click "Properties" in the "Monitor" tab. If the "Properties" button is deactivated, it means the configuration for your monitor is completed. The monitor can be used as is.

   If the message "Windows needs..." is displayed, as shown in the figure below, click "Continue".



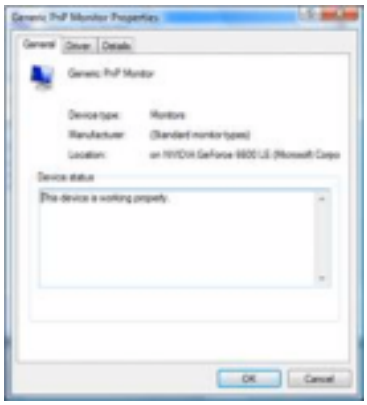


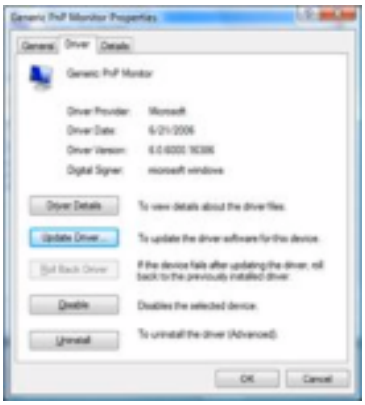
Note

This monitor driver is under certifying MS logo, and this installation doesn't damage your system.

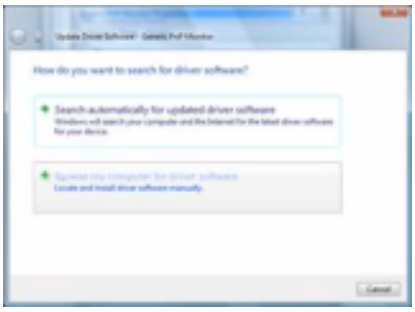
The certified driver will be posted on Samsung Monitor homepage.

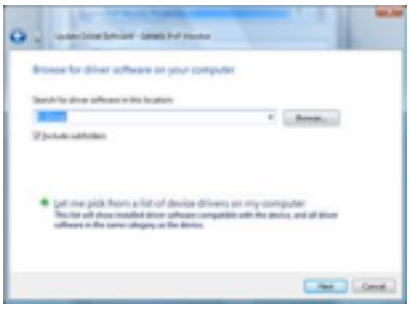
6. Click "Update Driver..." in the "Driver" tab.



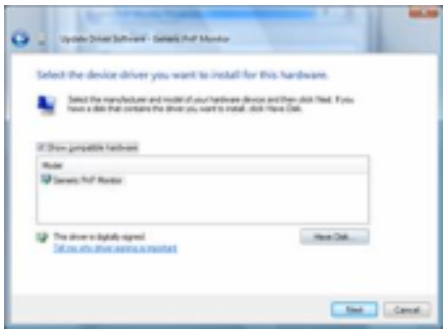


7. Check the "Browse my computer for driver software" checkbox and click "Let me pick from a list of device drivers on my computer".

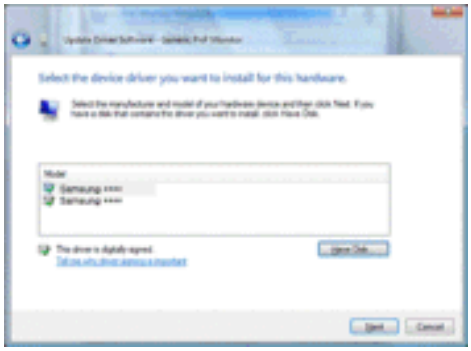




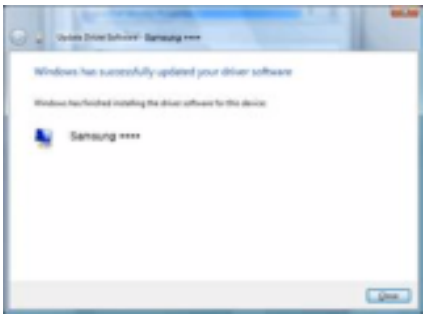
8. Click "Have Disk...” and select the folder (for example, D:\Drive) where the driver setup file is located, and click "OK".

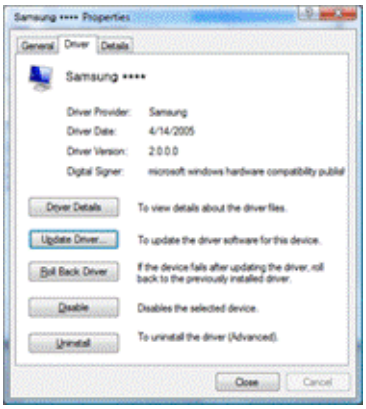


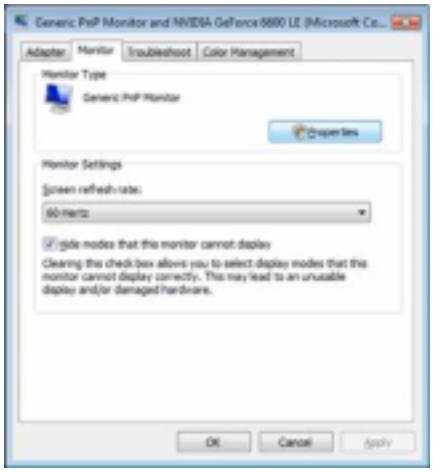
9. Select the model that matches your monitor from the list of monitor models on the screen, and click "Next".



10. Click "Close" → "Close" → "OK" → "OK" on the following screens displayed in sequence.

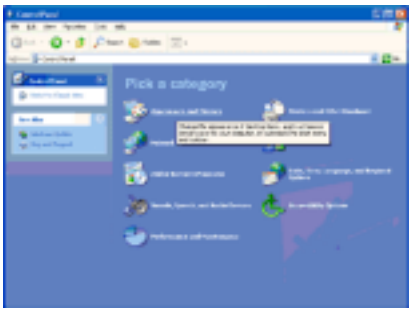




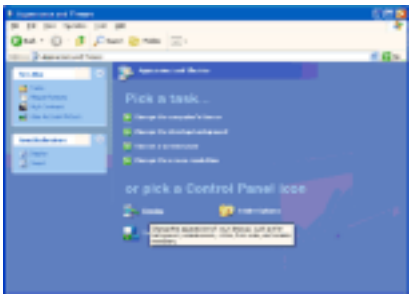
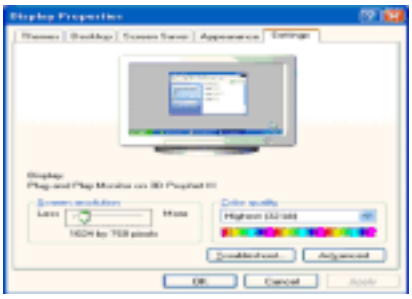


Microsoft® Windows® XP Operating System

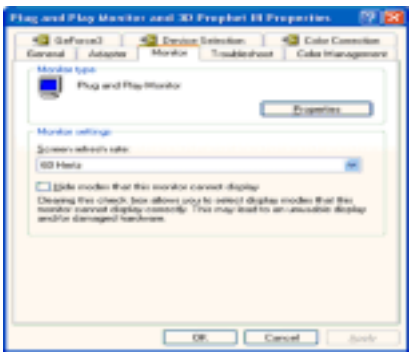
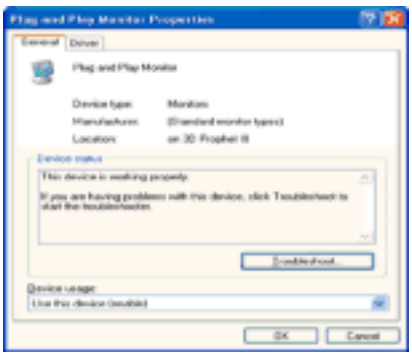
1. Insert CD into the CD-ROM drive.
2. Click "Start" → "Control Panel" then click the "Appearance and Themes" icon.



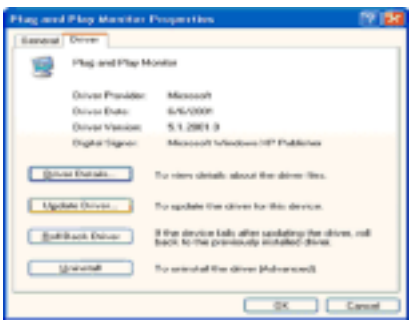
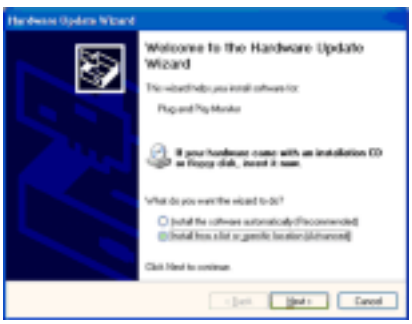
3. Click "Display" icon and choose the "Settings" tab then click "Advanced...".

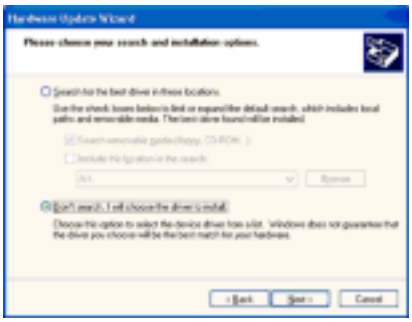
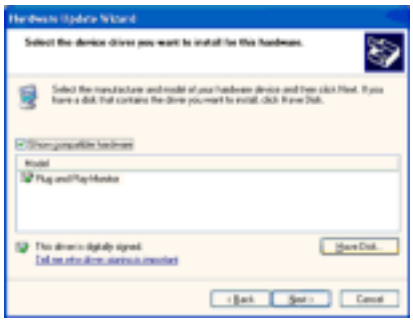
4. Click the "Properties" button on the "Monitor" tab and select "Driver" tab.

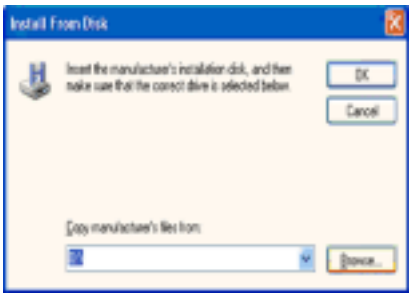
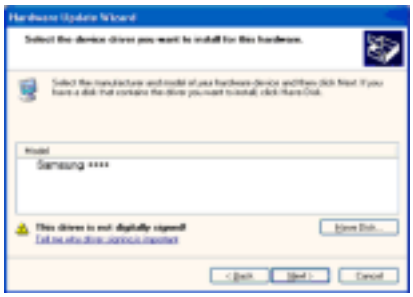
5. Click "Update Driver..." and select "Install from a list or..." then click "Next" button.

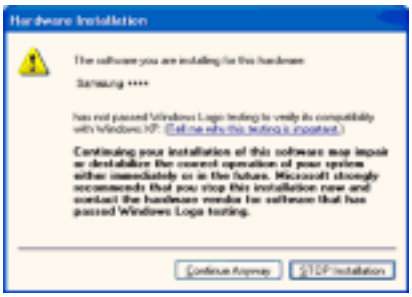
6. Select "Don't search, I will..." then click "Next" and then click "Have disk".

7. Click the "Browse" button then choose A:(D:\Driver) and choose your monitor model in the model list and click the "Next" button.

8. If you can see following message window, then click the "Continue Anyway" button. Then click "OK" button.



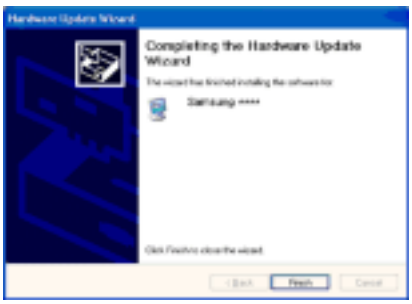
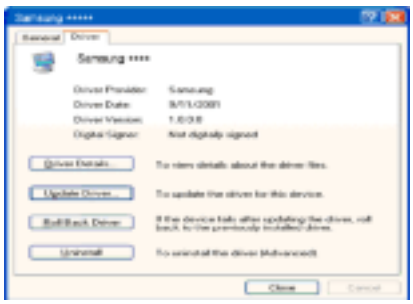
Note

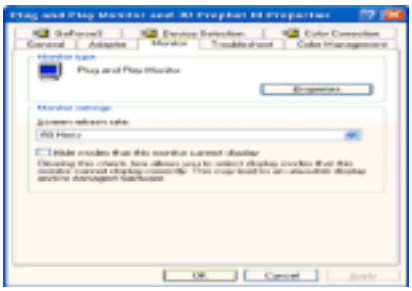
This monitor driver is under certifying MS logo, and this installation doesn't damage your system.

The certified driver will be posted on Samsung Monitor homepage.

http://www.samsung.com/

9. Click the "Close" button then click "OK" button continually.



10. Monitor driver installation is completed.

Microsoft® Windows® 2000 Operating System

When you can see "Digital Signature Not Found" on your monitor, follow these steps.

1. Choose "OK" button on the "Insert disk" window.
2. Click the "Browse" button on the "File Needed" window.
3. Choose A:(D:\Driver) then click the "Open" button and then click "OK" button.

How to install

1. Click "Start", "Setting", "Control Panel".
2. Double click the "Display" icon.
3. Select the "Settings" tab and click "Advanced Properties" button.
4. Choose "Monitor".

   Case1 : If the "Properties" button is inactive, it means your monitor is properly configured. Please stop installation

   Case2 : If the "Properties" button is active, click the "Properties" button then follow next steps continually.
5. Click "Driver" and then click on "Update Driver..." then click on the "Next" button.
6. Choose "Display a list of the known drivers for this device so that I can choose a specific driver" then click "Next" and then click "Have disk".
7. Click the "Browse" button then choose A:(D:\Driver).
8. Click the "Open" button, then click "OK" button.
9. Choose your monitor model and click the "Next" button then click "Next" button.
10. Click the "Finish" button then the "Close" button.

    If you can see the "Digital Signature Not Found" window then click the "Yes" button. And click the "Finish" button then the "Close" button.

Microsoft® Windows® Millennium Operating System

1. Click "Start", "Setting", "Control Panel".
2. Double click the "Display" icon.
3. Select the "Settings" tab and click "Advanced Properties" button.

4. Select the "Monitor" tab.
5. Click the "Change" button in the "Monitor Type" area.
6. Choose "Specify the location of the driver".
7. Choose "Display a list of all the driver in a specific location..." then click "Next" button.
8. Click the "Have Disk" button.
9. Specify A:\(D:\driver) then click "OK" button.
10. Select "Show all devices" and choose the monitor that corresponds to the one you connected to your computer and click "OK".
11. Continue choosing "Close" button and "OK" button until you close the Display Properties dialogue box.

Microsoft® Windows® NT Operating System

1. Click "Start", "Settings", "Control Panel", and then double-click "Display" icon.
2. In Display Registration Information window, click Settings Tab and then click "All Display Modes".
3. Select a mode that you wish to use (Resolution, Number of colors and Vertical frequency) and then click "OK".
4. Click "Apply" button if you see the screen working normally after clicking "Test". If the screen is not normal, change to a different mode (lower mode of resolution, colors or frequency).

Note

If there is no Mode at All Display Modes, select the level of resolution and vertical frequency by referring to the Preset Timing Modes in the user guide.

Linux Operating System

To execute X-Window, you need to make the X86Config file, which is a type of system setting file.

1. Press "Enter" at the first and the second screen after executing the X86Config file.
2. The third screen is for setting your mouse.
3. Set a mouse for your computer.
4. The next screen is for selecting a keyboard.
5. Set a Keyboard for your computer.
6. The next screen is for setting your monitor.
7. First of all, set a horizontal frequency for your monitor. (You can enter the frequency directly.)
8. Set a vertical frequency for your monitor. (You can enter the frequency directly.)
9. Enter the model name of your monitor. This information will not affect the actual execution of X-Window.
10. You have finished setting up your monitor. Execute X-Window after setting other requested hardware.

Natural Color

Natural Color Software Program

One of the recent problems in using a computer is that the color of the images printed out by a printer or other images scanned by a scanner or a digital camera are not the same as those shown on the monitor. The Natural Color S/W is the very solution for this problem. It is a color administration system developed by Samsung Electronics in association with Korea Electronics & Telecommunications Research Institute (ETRI). This system is available only for Samsung monitors and makes the color of the images on the monitor the same as the printed or scanned images. For more information, refer to Help (F1) in the software program.

How to install the Natural Color software

Insert the CD included with the Samsung monitor into the CD-ROM Drive. Then, the initial screen of the program Natural Color will be executed. Click Natural Color on the initial screen to install the Natural Color software.

To install the program manually, insert the CD included with the Samsung monitor into the CD-ROM Drive, click the [Start] button of Windows and then select [Run...]. Enter D:\color\NCProSetup.exe and then press the [Enter] key. (If the drive where the CD is inserted is not D:\, enter the applicable drive.)

How to delete the Natural Color software program

Select "Setting/Control Panel" on the "Start" menu and then double-click "Add/Delete a program". Select Natural Color from the list and then click the "Add/Delete" button.

Adjusting the Monitor

Picture

Available Modes

- **PC / DVI**
- **TV**
- **DTV**
- **Ext.**
- **Component**
- **HDMI**

Note

The default setting may different depending on the selected Input Mode (input signal source selected in External Input List) and the selected resolution.

Picture : PC / DVI

MagicBright

MagicBright is a feature providing optimum viewing environment depending on the contents of the image you are watching. Currently five different modes are available: **Entertain**, **Internet**, **Text**, **Dynamic Contrast** and **Custom**. Each mode has its own pre-configured brightness value.

The direct button on the remote control is 'M/B' button.

- **Entertain**

  High Brightness

  For watching motion pictures such as a DVD or VCD

- **Internet**

  For working with a mixture of images such as texts and graphics.

- **Text**

  For documentations or works involving heavy text.

- **Dynamic Contrast**

  Dynamic Contrast is to automatically detect distribution of inputted visual signal and adjust to create optimum contrast.

- **Custom**

  Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste.

  If this is the case, adjust the Brightness and Contrast by using the OSD menu.

Contrast / Brightness / Sharpness

(**Contrast** / **Brightness** / **Sharpness**: Not available in **MagicBright** mode of **Dynamic Contrast**.)

You can use the on-screen menus to change the contrast and brightness according to personal preference.

- **Contrast** : Adjust the Contrast.
- **Brightness** : Adjust the Brightness.
- **Sharpness** : Adjust the Sharpness.

Auto Adjustment

The values of **Fine**, **Coarse**, Position are adjusted automatically.

By changing the resolution in the control panel, auto function is performed.

The direct button on the remote control is the 'AUTO' button.

(Available in **PC** Mode Only)

Screen Adjustment (Available in PC mode only)

- **Coarse** / **Fine** :

  - **Coarse**

    Removes noise such as vertical stripes.

    Coarse adjustment may move the screen image area. You may relocate it to the center using the horizontal control menu.

  - **Fine**

    Removes noise such as horizontal stripes.

    If the noise persists even after **Fine** tuning, repeat it after adjusting the frequency (clock speed).

- **Position**

  Adjusts the screen location horizontally and vertically.

- **Image Reset**

Image parameters are replaced with the factory default values.

Picture Options

- **Colour Tone**

The tone of the color can be changed.

(Available in PC / DVI mode only)

Cool / Normal / Warm / Custom

- **R / G / B**

Adjusts the individual **R, G, B** color controls.

- **Size**

You can switch the Size.

Wide / 4:3

Reset

Picture parameters are replaced with the factory default values.

- **OK**
- **Cancel**

Picture : TV / DTV / Ext. / Component / HDMI TDECH

Mode

The Monitor has three automatic picture settings ("**Dynamic**", "**Standard**", and "**Movie**") that are preset at the factory.

You can activate either **Dynamic**, **Standard**, or **Movie**.

The direct button on the remote control is 'P.MODE' button.

- **Dynamic**

  Selects the picture for high-definition in a bright room.

- **Standard**

  Selects the picture for the optimum display in a normal environment.

- **Movie**

  Selects the picture for viewing movies in a dark room.

Contrast / Brightness / Sharpness / Colour / Tint

You can use the on-screen menus to change the contrast and brightness according to personal preference.

- **Contrast** : Adjust the Contrast.

- **Brightness** : Adjust the Brightness.
- **Sharpness** : Adjust the Sharpness.
- **Colour** : Adjust the colour.
- **Tint** : Adds a natural tone to the display. (It is activated when the signal is NTSC.)

Colour Tone

The tone of the color can be changed.

Cool1 / **Cool2** / **Normal** / **Warm1** / **Warm2**

- '**Warm1**' or '**Warm2**' is only activated when the picture mode is '**Movie**'.

- Settings can be adjusted and stored for each external device you have connected to an input of the TV.

Backlight

Adjust the screen brightness by adjusting the LCD backlight.

Size

You can switch the Size.

The direct button on the remote control is 'P.SIZE' button.

Auto Wide - Automatically adjusts the picture size to the "**16:9**" aspect ratio.

Wide - A full screen is displayed regardless of the screen aspect ratio of the input signals.

16:9 - Adjusts the picture size to **16:9** appropriate for DVDs or wide broadcasting.

Wide Zoom - Magnify the size of the picture more than **4:3**.

(Move the screen up/donw using the ▲ or ▼ button after selecting the by pressing the ▶ or ENTER button.)

Zoom - Magnifies the **16:9** wide picture (in the vertical direction) to fit the screen size.

(Select by pressing the ◀ or ▶button. Use the ▲ or ▼ button to move the picture up and down. After selecting , use the ▲ or ▼ button to magnify or reduce the picture size in the vertical direction.)

4:3 - Sets the picture to **4:3** normal mode.

Just Scan - Use the function to see the full image without any cut off when HDMI (480i / 1080i), Component (480i / 1080i) or DTV(480i / 1080i) signals are input.

(**Just Scan** are only operated in **HDMI** mode.)

Screen Mode

Only when setting the **picture size** to **Auto Wide** can the user determine the **Screen mode**. Each individual European country requires a different picture size so this function is intended to help users to select it.

- '**Screen mode**' is supported in **TV**, **Ext.**, **Component** (480i/1080i) and **HDMI** (480i/1080i)

- **Picture Size** is available in **Auto Wide** mode

- This function is not available in **PC** or **Component**,**Ext.**, **HDMI** mode.

Wide / **16:9** / **Wide Zoom**/ **Zoom** / **4:3**

Digital NR

Digital Noise Reduction.

If the broadcast signal received by your TV is weak, you can activate the Digital Noise Reduction feature to help reduce any static and ghosting that may appear on the screen.

Off - Turns the screen noise reduction function off.

Low - Reduces screen noise at a low level.

Medium - Reduces screen noise at a medium level.

High - Reduces screen noise at a high level.

Auto - Automatically recognizes and reduces screen noise.

Reset

Picture parameters are replaced with the factory default values.

- **OK**
- **Cancel**

Sound

Available Modes

- **PC / DVI**
- **TV**
- **DTV**
- **Ext.**
- **Component**
- **HDMI**

Note

The default setting may different depending on the selected Input Mode (input signal source selected in External Input List) and the selected resolution.

Mode

The Monitor has a built-in high fidelity stereo amplifier.

- **Standard**

  Choose Standard for the standard factory settings.

- **Music**

  Choose Music when watching music videos or concerts.

- **Movie**

  Choose Movie when viewing movies.

- **Speech**

Choose Speech when watching a show that is mostly dialogue (i.e., news).

- **Custom**

  Choose Custom if you want to adjust the settings according to personal preference.

Equalizer PTDECH

You can adjust the left and right sound balance and the low or high volume as you want.

SRS TS XT PTDECH

You can experience sonorous and vivid sound, as if from 5.1 channel speakers.

- **Off**
- **On**

Auto Volume PTDECH

Reduces the differences in volume level among broadcasters.

- **Off**
- **On**

TV Speaker PTDECH

If you set this menu "**On**", sound output from the speakers is muted in case of using the home theater.

- **Off**
- **On**

Channel

Available Modes

- **TV**

Note

The default setting may different depending on the selected Input Mode (input signal source selected in External Input List) and the selected resolution.

Country

Select the country in which the product is being used before you use the Auto Store feature. If you do not see your country in the list, select Others.

Auto Store

You can scan the frequency ranges available on your television in your area and store all the channels found automatically.

Manual Store

You can scan the frequency ranges available on your television in your area and store all the channels found manually.

- **Programme**

  Inputting the appropriate program number on the screen.

- **Colour System**

  Adjusts repeatedly until the colour is of the best quality.

  (**Auto** <-> **PAL** <-> **SECAM** <-> **NTSC4.43**)

- **Sound System**

  Adjusts repeatedly until the sound is of the best quality.

- **Channel**

  You can store television channels, including those received via cable networks.

  When storing channels manually, you can choose:

  Whether or not to store each of the channels found. The Programme number of each stored channel which you wish to identify

  - **C** (Air channel mode): You can select a channel by entering the assigned number to each air broadcasting station in this mode.

  - **S** (Cable channel mode): You can select a channel by entering the assigned number for each cable channel in this mode.

- **Search**

  The tuner scans the frequency range until the first channel or the channel that you selected is received on your screen.

- **Store**

  It's used to restore the number user inputs.

Channel Manager

- **Channel List**

You can add or delete a channel so only channels you want are displayed.

is active when Child Lock is selected to On.

- **Child Lock**

Protects children from viewing inappropriate programs by blocking certain broadcast or video programs.

The Child Lock feature can be selected only from the remote.

Sort

It's used to exchange the numbers of two channels.

Name

Name the device connected to the input jacks to make your input source selection easier.

The following characters are available: Letters of the alphabet (A~Z) / Numbers (0~9) / Special characters (+, -, *, /, space)

Fine Tune T

Due to weak signals or an incorrect antenna configuration, some of the channels may not be tuned correctly.

Setup

Available Modes

- P **PC / DVI**
- T **TV**
- D **DTV**
- E **Ext.**
- C **Component**
- H **HDMI**

Note

The default setting may different depending on the selected Input Mode (input signal source selected in External Input List) and the selected resolution.

Plug & Play T

When the TV is initially powered on, several basic settings proceed automatically and sub sequently. the following settings are available.

- **Shop** : Select Shop Mode. only when setting up in TV store.
- **Home** : Select Home Mode. when installing this TV at home.

(Available in Analog **TV** Mode Only)

Language

You can choose one of 21 languages.

- English, Deutsch, Français, Italiano, Español, Nederlands, Português, Ελληνικά, Čeština, Srpski, Hrvatski, Română, Magyar, Polski, Русский, Български, Türkçe, Svenska, Norsk Dansk, Suomi

The language chosen affects only the language of the OSD.

Time

- **Clock Set**

You can set the current time.

- **Sleep Timer**

Use to set the Monitor to be turned off automatically in certain minutes.

- **Off**, **30**, **60**, **90**, **120**, **150**, **180**

- **Timer1** / **Timer2** / **Timer3**

You can have the monitor turned on or off automatically at a specified time.

- **On time**

  Select hour, minute and “**On**”/”**Off**”.

  (To activate timer with the setting satisfied, set to ‘**On**’)

- **Off time**

  Select hour, minute and "**On**"/"**Off**".

  (To activate timer with the setting satisfied, set to ‘**On**’)

- **Repeat**

  Select "**Once**", "**Everyday**", "**Mon~Fri**", "**Mon~Sat**" or "**Sat~Sun**".

- **Volume**

  Select the required volume level.

- **Programme**

Adjust a Programme

Blue Screen

If no signal is being received or the signal is very weak, a blue screen automatically replaces the noisy picture background. If you wish to continue viewing the poor picture, you must set the "**Blue screen**" mode to "**Off**".

- **Off**
- **On**

Melody

A melody sound can be set to come on when the monitor is powered On or Off.

- **Off** : Turns off the melody function.
- **Low** : Sets the melody volume to low.
- **Medium** : Sets the melody volume to medium.
- **High** : Sets the melody volume to high.

Light Effect PTDECH

You can turn on/off the LED on the front of monitor according to the situation. use it for saving power or when the LED dazzles your eyes.

- **Off** : LED will not come on.
- **In Standby** : Turns the LED on in standby mode.
- **In Watching TV** : Turns the LED on while watching TV.
- **Always** : LED is always on.

Light Level PTDECH

Use to adjust the light level i.e., the brightness of the light.

Energy Saving TDECH

This feature adjusts the brightness of the TV in order to reduce power consumption. When watching TV at night, set the "**Energy Saving**" mode option to "**High**" to reduce eye fatigue as well as power consumption.

- **Off** : Turns off the energy saving function.
- **Low** : Sets the TV to low energy saving mode.
- **Medium** : Sets the TV to medium energy saving mode.
- **High** : Sets the TV to high energy saving mode.
- **Auto** : Automatically adjusts the brightness of the TV screen in accordance with the scenes.

HDMI Black Level H

When a DVD or set-top box is connected to your TV via HDMI, it may cause a degradation in the screen quality, such as an increase in the black level, a low contrast, or discoloration, etc., depending on the external device connected. In this case, adjust the screen quality of your TV by configuring the HDMI black level. This function is active only when the an external device (DVD player, STB etc.) is connected to the TV via HDMI(RGB Signal).

(Available in **HDMI** Mode Only)

- **Normal**
- **Low**

Input

Available Modes

- P **PC / DVI**
- T **TV**
- D **DTV**
- E **Ext.**
- C **Component**
- H **HDMI**

Note

The default setting may different depending on the selected Input Mode (input signal source selected in External Input List) and the selected resolution.

Source List P T D E C H

Use to select PC, TV or other external input source connected to the product.Use to select the screen of your choice.

The direct button on the remote control is "SOURCE" button.

- **PC**
- **DVI**
- **TV**
- **Component**
- **HDMI1**
- **HDMI2**
- **DTV**

Edit Name

Name the input device connected to the input jacks to make your input source selection easier

- **PC**
- **VCR**
- **DVD**
- **D-VHS**
- **Cable STB**
- **HD STB**
- **Satellite STB**
- **AV Receiver**
- **DVD Receiver**
- **Game**
- **Camcorder**
- **DVD Combo**
- **DHR**

Troubleshooting

Self-Test Feature Check

Note

- Check the following items yourself before calling for service. Contact the service center for problems that you cannot solve by yourself.
- Your monitor provides a self test feature that allows you to check whether your monitor is functioning properly.

Self-Test Feature Check

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.

   The figure shown below ("**Check Signal Cable**") appears on a black background when the monitor is in its normal working condition though it does not sense any video signal: While in the Self-Test mode, the LED power indicator remains green and the figure moves around on the screen.

4. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.

If your monitor screen remains blank after using the previous procedure, check your video controller and computer system; *your monitor is functioning properly.*

Not Optimum Mode

If the vertical resolution is not optimum mode, you can still see the display but the warning message below appears and disappears after one minute.

The user must adjust the frequency within that one minute.

Note

Refer to Specifications > Preset Timing Modes for the resolutions or frequencies that are supported by the monitor.

Maintenance and Cleaning

1. Maintaining the Monitor Case.

Clean with a soft cloth after disconnecting the power cord.

- Do not use benzene, thinner or other flammable substances, or a wet cloth.
- We recommend a Samsung cleansing agent is used to prevent damage to the screen.

2. Maintaining the Flat Panel Display Screen.

Clean with a soft cloth (cotton flannel) smoothly.

- Never use acetone, benzene or thinner.

  (They may cause flaws or deformation of the screen surface.)
- The user will be required to pay costs and related expenses for repair of damages caused by him/her.

Symptoms and Recommended Actions

Note

A monitor recreates visual signals received from the computer. Therefore, if there is trouble with the computer or the video card, this can cause the monitor to become blank, have poor coloring, noise, Video mode not supported, etc. In this case, first check the SOURCE of the problem, and then contact a service center or your dealer.

1. Check if the power cord and the video cables are properly connected to the computer.

2. Check if the computer beeps more than 3 times when booting.

(If it does, request an after-service for the main board of the computer.)

3. If you installed a new video card or if you assembled the PC, check if you installed the adapter (video) driver and the monitor driver.

4.Check if the scanning ratio of the video screen is set at 56 Hz ~ 75 Hz.

(Do not exceed 60 Hz when using the maximum resolution.)

5. If you have problems in installing the adapter (video) driver, boot the computer in Safe Mode, remove the Display Adapter at the "Control Panel, System, Device Administrator" and then reboot the computer to reinstall the adapter (video) driver.

Check List

Note

Before calling for assistance, check the information in this section to see if you can remedy any problems yourself. If you do need assistance, please call the phone number on the Information section or contact your dealer.

1. Problems related to Installation

Note

Problems related to the monitor installation and their solutions are listed.

PC Mode

Q: It appears the PC does not function normally.

A: Check if the Display Adapter Driver (VGA Driver) is properly installed. (Refer to Installing Driver)

Q: The monitor screen flickers.

A: Check if the signal cable between the computer and the monitor is securely connected and tightened.(Refer to Connecting the monitor)

TV Mode

Q: TV screen is blurred or shows noise signals.

A: Check if the TV antenna connector is securely connected to the external antenna.(Refer to Connecting TV)

2. Problems related to Screen

Note

Problems related to the monitor screen and their solutions are listed.

Q: Screen is blank and power indicator is off

A: Ensure that the power cord is firmly connected and the LCD monitor is on.(Refer to the Connecting the monitor)

Q: "**Check Signal Cable**" message

A: Ensure that the signal cable is firmly connected to the PC or video SOURCEs.(Refer to the Connecting the monitor)

A: Ensure that the PC or video SOURCEs are turned on.

Q: "**Not Optimum Mode**" message

A: Check the maximum resolution and the frequency of the video adapter.

A: Compare these values with the data in the Preset Timing Modes Chart.

Q: Picture rolls vertically.

A: Check if the signal cable is securely connected.Connect it again securely. (Refer to Connecting the monitor)

Q: Image is not clear. Picture is blurred.

A: Run Frequency Coarse and Fine tuning.

A: Turn on again after removing all accessories (video extension cable, etc.)

A: Set resolution and frequency to the recommended ranges.

Q: Picture image is unstable and vibrates.

Ghost images are shown in the picture.

A: Check if the resolution and frequency set for the computer video card falls in the range supported by the monitor. If not, reset them referring to the current Information under the monitor menu and Preset Timing Modes.

Q: The image is too light or too dark

A: Adjust the **Brightness** and **Contrast**.(Refer to the Brightness, Contrast)

Q: Power Indicator blinks green.

A: The monitor is currently saving the changes made in settings to the OSD memory.

Q: Screen is blank and power indicator light is steady green or blinks every 0.5 or 1 seconds

A: The monitor is using its power management system

A: press a key on the keyboard

Q: The screen is blank and is blinking.

A: If you see the "TEST GOOD" message on the screen when you press the MENU button, check the cable connection between the monitor and the computer to ensure that the connector is properly connected.

3. Problems related to Audio

Note

Problems related to audio signals and their solutions are listed below.

Q: No sound

A: Ensure that the audio cable is firmly connected to both the audio-in port on your monitor and the audio-out port on your sound card.(Refer to the Connecting the monitor)

A: Check the volume level.(Refer to the Volume)

Q: The sound level is too low.

A: Check the volume level.(Refer to the Volume)

A: If the volume is still too low after turning the control to its maximum, check the volume control on the computer sound card or software program.

4. Problems related to Remote Control

Note

Problems related to the remote control and their solutions are listed.

Q: The remote control buttons do not respond.

A: Check the battery polarities (+/-).

A: Check if the batteries have been exhausted.

A: Check if the power is on.

A: Check if the power cord is securely connected.

A: Check if a special fluorescent or neon lamp is on in the vicinity

5. You may see small particles if you look closely at the edge of the bezel surrounding the screen.

This is part of the product's design and is not a defect.

Q & A

Q: How can I change the frequency?

A: The frequency can be changed by reconfiguring the video card.

A: Note that video card support can vary, depending on the version of the driver used. (Refer to the computer or the video card manual for details.)

Q: How can I adjusts the resolution?

A: Windows XP:

Set the resolution in the Control Panel → Appearance and Themes → Display → Settings.

A: Windows ME/2000:

Set the resolution in the Control Panel → Display → Settings.

* Contact the video card manufacturer for details.

Q: How can I set the Power Saving function?

A: Windows XP:

Set the resolution in the Control Panel → Appearance and Themes → Display → Screen Saver.

Set the function in the BIOS-SETUP of the computer. (Refer to the Windows / Computer Manual).

A: Windows ME/2000:

Set the resolution at the Control Panel → Display → Screen Saver.

Set the function in the BIOS-SETUP of the computer. (Refer to the Windows / Computer Manual).

Q: How can I clean the outer case/LCD Panel?

A: Disconnect the power cord and then clean the monitor with a soft cloth, using either a cleaning solution or plain water.

Do not leave any detergent or scratches on the case. Do not let any water enter the monitor.

Q: What are the benefits of digital broadcasting?

A: Digital TV broadcasting generates less noise and provides clearer visuals and sound than analog TV broadcasting does. As services develop, you can also enjoy various information services because various kinds of data besides video and audio can be sent.

A: For example, while watching a sports game, you can view various data on your favorite player or you can view all or selected screens which have been captured from different angles for a specific scene. In addition, you can retrive information on a previous story or drama or you can buy home shopping products such as an accessory currently on TV.

Digital TV broadcasting allows you to easily access various information services in your home creating a more information-oriented home.

Q: What is the difference between HDTV and SDTV?

A: There are various types of digital TVs.

A: The most widely known types of digital TV are HDTV and SDTV. They are classified according to the screen quality and the video specifications.

- HDTV (High Definition TV): High screen quality, very clear TV.
- SDTV (Standard Definition TV): Common standard digital TV.

A: An SDTV has an aspect ratio of 4:3 which is the same as that of an analog TV. SDTV has an aspect ratio of 16:9 which is similar to a cinema screen. This provides a much better screen quality than SDTV. It's like having a theater in your home.

A: Digital TV broadcasting in our country is ultimately orientated towards HDTV.

Q: Can I watch HD broadcasting with all digital TVs?

A: You can receive all digital broadcasts, whether they are SD or HD, using any digital TV. However, you cannot enjoy HD programs, which are the highest quality digital TV programs, using an SD digital TV. Especially, as SD broadcasting has an aspect ratio of 4:3, HD broadcasting has an aspect ratio of 16:9, similar to a cinema screen.

Therefore, to enjoy the full benefits of digital TV, it is better to purchase an HD digital TV.

(At present, all digital TVs from Samsung Electronics have the 16:9 wide aspect ratio.)

Q: Can I watch digital TV broadcasting with an analog TV?

A: No.

A: The analog TV cannot interpret digital signals. Therefore, a digital TV is required to watch digital TV broadcasting.

Q: Can I use my present antenna to receive digital broadcasting?

A: As for existing analog TV, digital TV is designed so that digital broadcasting signals are received via both indoor and outdoor antennas.

A: If signal reception is very good in your environment, you can watch digital broadcasts with your existing indoor antenna. If not, it is better to install an outdoor UHF antenna.

Q: How do I connect an antenna for an apartment or tenement house?

A: Consult the superintendent's office or broadcasting facility administrator for your apartment or tenement house to check whether UHF reception is available.

A: Even if digital TV broadcasting is available in your area, if you cannot watch it because the superintendent's office or common broadcasting facility does not rebroadcast the signal, you have to install an indoor or outdoor antenna.

A: Alternatively, your local cable broadcasting company provides a digital TV service, and you can subscribe to it.

A: If a cable broadcasting company is sharing a common broadcasting facility for your apartment or tenement house, it has to adjust and send digital TV signals so that they are compatible to shared viewing which is the original purpose of the common broadcasting facility.

Specifications

General

General	
Model Name	SyncMaster T200HD

LCD Panel	
Size	20 inch (51 cm)
Display area	433.44 mm (H) x 270.9 mm (V)
Pixel Pitch	0.258 mm (H) x 0.258 mm (V)

Synchronization	
Horizontal	30 ~ 81 kHz
Vertical	56 ~ 75 Hz

Display Color

16.7M

Resolution	
Optimum resolution	1680 x 1050 @ 60 Hz
Maximum resolution	1680 x 1050 @ 60 Hz

Input Signal, Terminated

RGB Analog, DVI(Digital Visual Interface)

0.7 Vp-p ±5 %

separate H/V sync, Composite

TTL level (V high ≥ 2.0 V, V low ≤ 0.8 V)

Maximum Pixel Clock

146.250 MHz (Analog, Digital)

Power Supply

AC 100 - 240 V~ (+/- 10 %), 50/60 Hz ± 3 Hz

Signal Cable

15pin - to - 15pin D-sub cable, Detachable

DVI-D to DVI-D connector, Detachable

Dimensions (W x H x D) / Weight

486 x 350 x 86 mm / 19.1 X 13.8 X 3.4 inch (Without Stand)

486 x 417.5 x 215 mm / 19.1 X 16.4 X 8.5 inch (With Stand) / 5.6 kg / 12.3 Ibs

Environmental considerations	
Operating	Temperature : 50 °F ~ 104 °F (10 °C ~ 40 °C)

Environmental considerations

	Humidity : 10 % ~ 80 %, non-condensing
Storage	Temperature : -4 °F ~ 113 °F (-20 °C ~ 45 °C) Humidity : 5 % ~ 95 %, non-condensing

Plug and Play Capability

This monitor can be installed on any Plug & Play compatible system. The interaction of the monitor and the computer systems will provide the best operating conditions and monitor settings. In most cases, the monitor installation will proceed automatically, unless the user wishes to select alternate settings.

Dot Acceptable

TFT-LCD panels manufactured by using advanced semiconductor technology with precision of 1ppm (one millionth) above are used for this product. But the pixels of RED, GREEN, BLUE and WHITE color appear to be bright sometimes or some black pixels may be seen. This is not from bad quality and you can use it without any problems.

For example, the number of TFT-LCD sub pixels contained in this product are 5,292,000.

Note

Design and specifications are subject to change without prior notice.

Class B Equipment (Information Communication equipment for residential use)

This product complies with the Electromagnetic Compatibility Directives for residential use and can be used in all areas including common residential areas. (Class B equipment emits less electromagnetic waves than Class A equipment.)

PowerSaver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor to low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPM compliant video card installed in your computer. Use the software utility installed on your computer to set up this feature.

State	Normal Operation	Power saving mode	Power off (Power button) EPA/ENERGY 2000
Power Indicator	On	Blinking	Off
Power Consumption	50 watts	Less than2 watts	Less than 1 watts

This monitor is EPA ENERGY STAR® compliant and ENERGY2000 compliant when used with a computer equipped with VESA DPM functionality.

As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjusts the screen as follows.

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 960	60.000	60.000	108.000	+/+
VESA, 1280 x 1024	63.981	60.020	108.000	+/+
VESA, 1280 x 1024	79.976	75.025	135.000	+/+
VESA, 1680 x 1050	65.290	59.954	146.250	-/+

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called the Horizontal Cycle and the inverse number of the Horizontal Cycle is called the Horizontal Frequency. Unit: kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called the Vertical Frequency or Refresh Rate. Unit: Hz

General

General	
Model Name	SyncMaster T220HD
LCD Panel	
Size	22 inch (55 cm)

LCD Panel

Display area	473.76 mm (H) x 296.1 mm (V)
Pixel Pitch	0.282 mm (H) x 0.282 mm (V)

Synchronization

Horizontal	30 ~ 81 kHz
Vertical	56 ~ 75 Hz

Display Color

16.7M

Resolution

Optimum resolution	1680 x 1050 @ 60 Hz
Maximum resolution	1680 x 1050 @ 60 Hz

Input Signal, Terminated

RGB Analog, DVI(Digital Visual Interface)

0.7 Vp-p ±5 %

separate H/V sync, Composite

TTL level (V high ≥ 2.0 V, V low ≤ 0.8 V)

Maximum Pixel Clock

146.250 MHz (Analog, Digital)

Power Supply

AC 100 - 240 V~ (+/- 10 %), 50/60 Hz ± 3 Hz

Signal Cable

15pin - to - 15pin D-sub cable, Detachable

DVI-D to DVI-D connector, Detachable

Dimensions (W x H x D) / Weight

520 x 373.5 x 86.5 mm / 20.5 X 14.7 X 3.4 inch (Without Stand)

520 x 441.5 x 215 mm / 20.5 X 17.4 X 8.5 inch (With Stand) / 5.8 kg / 12.8 Ibs

Environmental considerations

Operating	Temperature : 50 °F ~ 104 °F (10 °C ~ 40 °C) Humidity : 10 % ~ 80 %, non-condensing
Storage	Temperature : -4 °F ~ 113 °F (-20 °C ~ 45 °C) Humidity : 5 % ~ 95 %, non-condensing

Plug and Play Capability

This monitor can be installed on any Plug & Play compatible system. The interaction of the monitor and the computer systems will provide the best operating conditions and monitor

Plug and Play Capability

settings. In most cases, the monitor installation will proceed automatically, unless the user wishes to select alternate settings.

Dot Acceptable

TFT-LCD panels manufactured by using advanced semiconductor technology with precision of 1ppm (one millionth) above are used for this product. But the pixels of RED, GREEN, BLUE and WHITE color appear to be bright sometimes or some black pixels may be seen. This is not from bad quality and you can use it without any problems.

For example, the number of TFT-LCD sub pixels contained in this product are 5,292,000.

Note

Design and specifications are subject to change without prior notice.

Class B Equipment (Information Communication equipment for residential use)

This product complies with the Electromagnetic Compatibility Directives for residential use and can be used in all areas including common residential areas. (Class B equipment emits less electromagnetic waves than Class A equipment.)

PowerSaver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor to low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPM compliant video card installed in your computer. Use the software utility installed on your computer to set up this feature.

State	Normal Operation	Power saving mode	Power off (Power button) EPA/ENERGY 2000
Power Indicator	On	Blinking	Off
Power Consumption	58 watts	Less than2 watts	Less than 1 watts

This monitor is EPA ENERGY STAR® compliant and ENERGY2000 compliant when used with a computer equipped with VESA DPM functionality.

As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Preset Timing Modes

If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjusts the screen as follows.

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 480	31.469	59.940	25.175	-/-
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VESA, 1280 x 960	60.000	60.000	108.000	+/+
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VESA, 1280 x 1024	79.976	75.025	135.000	+/+
VESA, 1680 x 1050	65.290	59.954	146.250	-/+

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called the Horizontal Cycle and the inverse number of the Horizontal Cycle is called the Horizontal Frequency. Unit: kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called the Vertical Frequency or Refresh Rate. Unit: Hz

Information

For Better Display

Adjust the computer resolution and screen injection rate (refresh rate) on the computer as described below to enjoy the best picture quality. You can have an uneven picture quality on screen if the best picture quality is not provided for TFT-LCD.

- Resolution: 1680 x 1050
- Vertical frequency (refresh rate): 60 Hz

TFT-LCD panels manufactured by using advanced semiconductor technology with a precision of 1ppm (one millionth) and above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen. This is not from bad quality and you can use it without any problems.

- For example, the number of TFT-LCD sub pixels contained in this product are 5,292,000.

When cleaning the monitor and the panel outside, please apply the recommended small amount of cleaner by using a soft cloth to polish. Do not force the LCD area but rub softly.

If excessive force is applied, you may stain it.

If you are not satisfied with the picture quality, you can get better quality of picture by performing the "**Auto Adjustment** function" in display screen that is appeared as window termination button is pressed.

If there's still noise after the automatic adjustment, use the **Fine**/**Coarse** adjustment function.

When viewing a fixed screen for an extended period of time, a residual image or blurriness may appear.

Change the mode to energy save or set a screensaver to move the picture when you need to be away from the monitor for an extended period of time.

Do not display a still image(such as on a video game or when hooking up a DVD to this LCD_TV) on the Color TFT-LCD (Thin Film Transister Liquid Crystal Display) panel for a long time as it can cause screen image retention. This image retention is also known as "screen burn". To avoid such image retention, reduce the degree of brightness and contrast of this screen when displaying a still image.

Watching Digital Broadcasting Correctly

Digital 16:9 HD Broadcasting Screen	*Digital SD Broadcasting Screen*	*Digital 4:3 Broadcasting Screen*
This screen is shown when scenes are captured using digital broadcasting equipment	This screen is shown when scenes are converted to analog broadcasting signals before being sent. Humans and	This screen is shown when scenes created via analog signals are displayed while

and they are sent in HDTV (16:9) mode.	objects appear heavier than in reality.	watching HDTV broadcasting.

Note

If temporary stops, mosaic screens, or jagged screens occur, this is not a TV problem. Contact your cable broadcasting company for a check-up.

For information on how to connect and use your video, DVD, DVD combo, home theater, PC, etc., refer to their respective user manuals.

PRODUCT INFORMATION (Image Retention Free)

LCD Monitors and TVs may have image retention when switching from one image to another especially after displaying a stationary image for a long time.

This guide is to demonstrate correct usage of LCD products in order to protect them from Image retention.

Warranty

Warranty does not cover any damage caused by image retention.

Burn-in is not covered by the warranty.

What is Image retention ?

During normal operation of a LCD panel, pixel image retention doesn't occur. However, if the same image is displayed for a long time, a slight difference in electric charge accumulates between the two electrodes which encase the liquid crystal. This may cause the liquid crystal to build up in a certain areas of the display. Thus, the previous image is retained when switching to a new video image. All display products, including LCD, are subject to image retention. This is not a product defect.

Please follow the suggestions below to protect your LCD from image retention.

Power Off, Screen Saver, or Power Save Mode

Ex)

- Turn the power off when using a stationary pattern.
  - Turn the power off for 4 hours after 20 hours in use
  - Turn the power off for 2 hours after 12 hours in use
- Use a Screen saver if possible
  - Screen saver in one color or a moving image is recommended.
- Set the Monitor to power off with the PC Display Properties Power Scheme.

Suggestions for specific applications

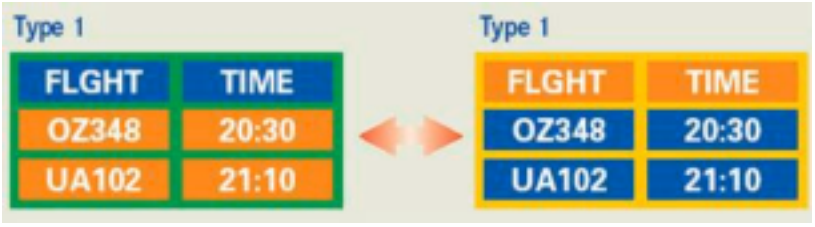
Ex) Airports, Transit Stations, Stock Markets, Banks, and Controlling Systems We recommend that you follow set up of your display system program as below:

Display Information together with Logo or Moving image cycle.

Ex) Cycle : Display Information for 1 hour followed by a Display Logo or moving image for 1 minute.

Change the Color Information periodically (Use 2 different colors).

Ex) Rotate the Color Information with 2 colors every 30 minutes.



Avoid using a combination of characters and background color with large difference in luminance.

Avoid using Grey colors, which can cause Image retention easily.

- Avoid: Colors with big difference in luminance (Black & White, Grey)

  Ex)

- Recommended settings: Bright colors with little difference in luminance
  - Change the characters color and background color every 30 minutes

    Ex)

  - Every 30 minutes, change the characters with movement.

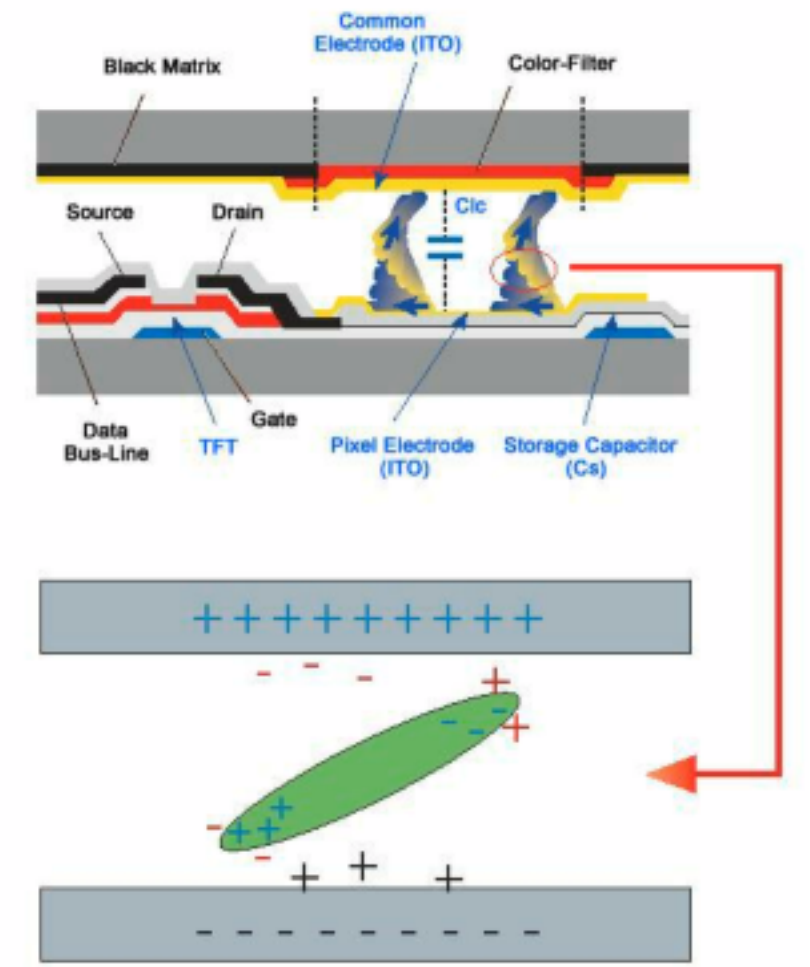
    Ex)

The best way to protect your monitor from Image retention is to set your PC or System to operate a Screen Saver program when you are not using it.

Image retention may not occur when a LCD panel is operated under normal conditions.

Normal conditions are defined as continuously changing video patterns. When the LCD panel is operated for a long time with a fixed pattern (-over 12 hours-), there may be slight difference in voltage between electrodes that work the liquid crystal (LC) in a pixel. The voltage difference between electrodes increases with time, forcing the liquid crystal to lean. When this occurs, the previous image may be seen when the pattern is changed.

To prevent this, the accumulated voltage difference must be decreased.



Our LCD Monitor satisfies ISO13406-2 Pixel fault Class II

Appendix

Contact SAMSUNG WORLDWIDE

Note

If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care center.

	North America	
U.S.A	1-800-SAMSUNG(726-7864)	http://www.samsung.com
CANADA	1-800-SAMSUNG(726-7864)	http://www.samsung.com/ca
MEXICO	01-800-SAMSUNG(726-7864)	http://www.samsung.com
	Latin America	
ARGENTINE	0800-333-3733	http://www.samsung.com/ar
BRAZIL	0800-124-421	http://www.samsung.com
	4004-0000	
CHILE	800-SAMSUNG(726-7864)	http://www.samsung.com/cl
COLOMBIA	01-8000112112	http://www.samsung.com/co
COSTA RICA	0-800-507-7267	http://www.samsung.com/latin
ECUADOR	1-800-10-7267	http://www.samsung.com/latin
EL SALVADOR	800-6225	http://www.samsung.com/latin
GUATEMALA	1-800-299-0013	http://www.samsung.com/latin
HONDURAS	800-7919267	
JAMAICA	1-800-234-7267	http://www.samsung.com/latin
NICARAGUA	00-1800-5077267	
PANAMA	800-7267	http://www.samsung.com/latin
PUERTO RICO	1-800-682-3180	http://www.samsung.com/latin
REP. DOMINICA	1-800-751-2676	http://www.samsung.com/latin
TRINIDAD & TOBAGO	1-800-SAMSUNG(726-7864)	http://www.samsung.com/latin
VENEZUELA	0-800-100-5303	http://www.samsung.com/latin
	Europe	
AUSTRIA	0800-SAMSUNG (726-7864)	http://www.samsung.com/at
BELGIUM	0032 (0)2 201 24 18	http://www.samsung.com/be
CZECH REPUBLIC	844 000 844	http://www.samsung.com/cz
	Distributor pro Českou republiku: Samsung Zrt., česka organizační složka Vyskočilova 4, 14000 Praha 4	
DENMARK	70 70 19 70	http://www.samsung.com/dk
EIRE	0818 717 100	http://www.samsung.com/ie
FINLAND	030-6227 515	http://www.samsung.com/fi
FRANCE	3260 SAMSUNG (€ 0,15/Min)	http://www.samsung.com
	08 25 08 65 65 (€ 0,15/Min)	

Europe

GERMANY	01805 - SAMSUNG (726-7864) (€ 0,14/Min)	http://www.samsung.com
HUNGARY	06-80-SAMSUNG (726-7864)	http://www.samsung.com
ITALIA	800-SAMSUNG (726-7864)	http://www.samsung.com
LUXEMBURG	0035 (0)2 261 03 710	http://www.samsung.com/be
NETHERLANDS	0900 SAMSUNG (726-7864 € 0,10/Min)	http://www.samsung.com/nl
NORWAY	815-56 480	http://www.samsung.com/no
POLAND	0 801 801 881	http://www.samsung.com/pl
	022-607-93-33	
PORTUGAL	80820-SAMSUNG (726-7864)	http://www.samsung.com/pt
SLOVAKIA	0800-SAMSUNG (726-7864)	http://www.samsung.com/sk
SPAIN	902 10 11 30	http://www.samsung.com
SWEDEN	0771-400 200	http://www.samsung.com/se
SWITZERLAND	0800-SAMSUNG (726-7864)	http://www.samsung.com/ch
U.K	0845 SAMSUNG (7267864)	http://www.samsung.com

CIS

ESTONIA	800-7267	http://www.samsung.ee
LATVIA	800-7267	http://www.samsung.com/lv
LITHUANIA	8-800-77777	http://www.samsung.lt
KAZAKHSTAN	8-10-800-500-55-500	http://www.samsung.kz
KYRGYZSTAN	00-800-500-55-500	
RUSSIA	8-800-555-55-55	http://www.samsung.ru
TADJIKISTAN	8-10-800-500-55-500	
UKRAINE	8-800-502-0000	http://www.samsung.com
UZBEKISTAN	8-10-800-500-55-500	http://www.samsung.uz

Asia Pacific

AUSTRALIA	1300 362 603	http://www.samsung.com
CHINA	800-810-5858	http://www.samsung.com
	010-6475 1880	
HONG KONG	3698 - 4698	http://www.samsung.com/hk
INDIA	3030 8282	http://www.samsung.com
	1800 110011	
INDONESIA	0800-112-8888	http://www.samsung.com
JAPAN	0120-327-527	http://www.samsung.com/jp
MALAYSIA	1800-88-9999	http://www.samsung.com/my
NEW ZEALAND	0800 SAMSUNG(726-7864)	http://www.samsung.com/nz
PHILIPPINES	1800-10-SAMSUNG(726-7864)	http://www.samsung.com/ph
SINGAPORE	1800-SAMSUNG(726-7864)	http://www.samsung.com
THAILAND	1800-29-3232, 02-689-3232	http://www.samsung.com

Asia Pacific

TAIWAN	0800-329-999	http://www.samsung.com/tw
VIETNAM	1 800 588 889	http://www.samsung.com

Middle East & Africa

SOUTH AFRICA	0860-SAMSUNG(726-7864)	http://www.samsung.com
TURKEY	444 77 11	http://www.samsung.com
U.A.E	800-SAMSUNG(726-7864)	http://www.samsung.com
	8000-4726	

Terms

Sync Signal

Sync (Synchronized) Signals refer to the standard signals that are required to display desired colors on the monitor. They are divided into Vertical and Horizontal Sync Signals. These signals display normal color images by the set resolution and frequency.

Types of Sync Signals

- **Separate** — This is a scheme of transmitting individual vertical and hori sync signals to the monitor.
- **Composite** — This is a scheme of combining vertical and horizontal syn nals into one composite signal and transmitting it to the mo The monitor displays the color signals by separating the co site signal into original color signals.

Dot Pitch

The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm

Vertical Frequency

The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called the Vertical Frequency or Refresh Rate. Unit: Hz

Example: If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called the Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

Interlace and Non-Interlace Methods

Showing the horizontal lines of the screen from the top to the bottom sequentially is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

Plug & Play

This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

Resolution

The number of horizontal and vertical dots used to compose the screen image is called the 'resolution'. This number shows the ac-

	curacy of the display. A high resolution is good for performing multiple tasks as more image information can be shown on the screen. Example: If the resolution is 1680(1920) x 1050(1200), this means the screen is composed of 1680(1920) horizontal dots (horizontal resolution) and 1050(1200) vertical lines (vertical resolution).
RF Cable	A round signal cable generally used for TV antennas.
Satellite Broadcasting	Balances the levels of the sound coming from each speaker in televisions with two speakers.
Cable TV	Whereas the terrestrial broadcasting is delivered via frequency signals through the air, cable broadcasting is transmitted via a cable network. In order to view cable TV, one must purchase a cable receiver and hook it up to the cable network.
CATV	"CATV" refers to the broadcasting service offered at hotels, schools and other buildings through their own broadcasting system, apart from VHF or UHF broadcasting by terrestrial broadcasters. The CATV programs may include movies, entertainment and educational programs. (Different from cable TV.) CATV can be viewed only within the area in which the CATV service is offered.
VHF/UHF	VHF indicates TV channels 2 to 13, and UHF indicates channels 14 through 69.
Channel Fine Tuning	This feature allows the viewer to fine-tune the TV channel to obtain the best viewing conditions. The Samsung LCD TV has both automatic and manual channel fine-tuning features to enable the viewer to adjust their desired settings.
External Device Input	External device input refers to video input from such external video devices as VCRs, camcorders and DVD players, separate from a TV broadcast.
DVD	A type of digital disk technology that takes up only the benefits of CD and LD, to implement a high resolution/quality, which enables the user to enjoy clearer images.
DTV Broadcasting (Digital TV Broadcasting)	An enhanced broadcasting technology to process digital video signals using a set-top box, which implements a high resolution and clearer digital images on the screen.
LNA (Low Noise Amplifier)	This derives from artificial satellite technology that amplifies weak signals even in poor reception areas for sharper images.
Antenna Converter	A connection part that is used to link a Wide antenna cable (feeder cable) to the TV.
English Caption (= Caption Setting)	A kind of language selection feature that provides English subtitles (caption) or character information services from broadcasting services (ex: AFKN) or video tapes (marked CC), and which are especially useful for studying English.
Multiplex Broadcasting	This enables the user to enjoy the broadcasting service in both Korean and foreign (original) language as well as in stereo mode.

A2	This system uses two carriers to transmit voice data. Countries such as South Korea and Germany use this system.
BTSC	Broadcast Television System CommitteeThe stereo broadcasting system that is used in most of the countries that have adopted the NTSC system, including the United States, Canada, Chile, Venezuela and Taiwan. It also refers to the organization that has been organized to promote its development and management.
EIAJ	Electronic Industries Association of Japan.
DVI	DVI is the acronym for Digital Video Interface. It is a new type of video interface technology that provides the maximum screen quality for high quality display devices and high-end graphics cards including flat panel LCD monitors.
HDMI(High Definition Multimedia Interface)	This is an interface that connects both quality video signals and digital audio signals with a cable without any compression. • HD (High Definition) In HD, 1080-line, 2x density beaming (1080i) is used. HD provides a five times clearer screen quality than the existing analog method and has a wide 16:9 aspect ratio. • SD (Standard Definition) In HD, 480-line, double beaming (480i) is used. SD provides a screen quality somewhere between HD and the existing analog method. It exhibits a two times better screen quality than analog TV.
SRS TS XT	This feature outputs sonorous and vivid 3D sound as for 5.1 channel speaker sound but through a 2-channel speaker. It has a good effect when stereo signals are input.

Correct Disposal

Correct Disposal of This Product (Waste Electrical & Electronic Equipment) - Europe only

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This prod-

Correct Disposal of This Product (Waste Electrical & Electronic Equipment) - Europe only

uct should not be mixed with other commercial wastes for disposal.

Authority

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